43/0

#### CRUDE OIL AND SPCC INSPECTION SAFETY PLAN

***************************************
ECOLOGY AND ENVIRONMENT, INC. SAFETY PLAN
Office: Chicago
Incident Location: American Steel: 927 Collin St.; Joliet, IL 60435 (815) 726-4274
Team Leader: Mulle foota Date: 6 123/93 Site Safety Officer: Lee End Date: 6 123/93 Approved by: Date: 7
Incident Type: _Spill _ Fire _ Hazardous Waste Site \( \sqrt{SPCC Insp.} \) If a hazardous waste site, give name:
Incident Response Objective:
Background Review: _ CompletePartial  Documentation/Summary:  Overall Hazard: _ high _ moderatelow _ unknown  Site sketch attached: _ yesno
Material Type (spill/waste/product)
Potential Characteristics: corrosiveignitableradioactivevolatile     _toxic
ChemicalName(s):
Quantity Involved: wkrown Source: NA Cause: NA
INCIDENT/SITE DESCRIPTION: Size of property whenown  Number of Storage tanks whenown Buildings whenown
Tank size gallons, How many
Unusual Features (e.g., Sensitive areas, Endangered Species):
unknown

			4		
History	: No backgro	ound info	rmation		
Le	el Protection: vel of protecti downgraded, ex	on: A	В	_ c	
List sp	ecific protecti	ve clothing	required:		
1. steel -	toe boots 3. Sa hat 4. TL	fety glasses D Badges	5 6	7 8	
Field m 1. Came 2. tape	onitoring equip ra 3. me measure 4	ment and ma asuring wheel	terial requ 5 6	7 8	
	mination Proced tline Location:				
List of 1. N/A 2.	Equipment: (Ma 3. 4.	terial and	level of pr 5. 6.	rotection rec 7. 8.	uired)
Te	try Procedure: am Members ren Rydzewski (	ne - -	Responsibi Team Le		
Avoid company	Instructions: ontact with oil . Monitor for H				
	cy Precautions: alth Hazards:		threat, b	ut avoid con	tact with
Ac	ute Exposure Sy	mptoms (if	known):_ <u>N</u> O	NE KNOWN	
	rst Aide Instru hers:				exposed.

## **Emergency Information Sources:** Fire Department: 9// Police: 9// Hospital: Myso. Silver Cross Hospital Maple + Walnut 815-740-1100 EPA Contact: Maureen O'Mara (312)886-1960 Others: Mike Mangini, U.S. EPA (312) 353-7625 Route to, the hospital: Walnus Emergency Telephone No.: E & E Office: Chicago EPA Region V Hotline: (312) 353-2318 Chicago: (312) 663-9415 Buffalo: (716) 632-4491 E & E Emergency Response Center: (716) 684-8940 ATATL: Pat Zwilling (Home) (Office)(312)663-9415 TATL: Tom Kouris (Home) (219) 924-1341 (Office) (312) 663-9415 Communications: Nearest Telephone: TBD Communication Used On-site:

### OILS: CLARIFIED

1	Olly liquid	Colories	6.2 d 6.3 d	6. FIRE HAZARDS Flesh Point: Data not available Floremable Limits in Air: Data not available Fire Extinguishing Agentse: Dry chemical, foam, or carbon dioxide Fire Extinguishing Agents Not to be Used:	8. WATER POLLUTION 8.1 Aquatic Toxicity: Data not available 8.2 Waterfowt Toxicity: Data not available 8.3 Biological Oxygen Demend (BOD): Data not available 8.4 Food Chain Concentration Potential:
Stop discharge it p Call fire departuse Isolate and remow Notify local health	possible. ent. re discharged material. in and pollution control agencies		6.6 6.7	Water may be ineffective:  Special Hazards of Combustion Products:  Not pertinent  Behavior in Fire: Not pertinent  Ignition-Temperature: Data not available	None
Es W	Combustible.  Xtinguals with dry chemical, for a dare may be ineffective on fire. So old exposed containers with wat a dare may be a dare may			Electrical Hazard: Not pertinent Burning Rate: 4 mm/min.	9. SELECTED MANUFACTURERS  1. Shell Oil Co. 1 Shell Plaza Houston. Tex. 77001  2. Exxon Co. Houston. Tex. 77001
Exposure	Vot harmful.		7.2 7.3 7.4 7.5	7. CHEMICAL REACTIVITY Reactivity with Water: No reaction Reactivity with Common Materials: No reaction Stability During Transport: Stable Neutralizing Agents for Acids and Caustics: Not pertunent Inhibitor of Polymerization: Not pertunent Inhibitor of Polymerization: Not pertunent	3. Sun Oil Co. St. Davids, Pa. 19087
Water	Effect of low concentrations on Fooding to shoreline. May be dangerous if it enters was controlled to the controlled to	ter intakes. officials.		The particular of particular o	10. SHIPPING INFORMATION  10.1 Grades or Purity: Data not available  10.2 Storage Temperature: Ambient  10.3 Inert Atmosphere: No requirement  10.4 Venting: Open (flame arrester)
Mechanical con Should be remo		LABELS  No hazard label required by Code of Federal Regulations		11. HAZARD ASSESSMENT CODE 1509 Mazzird Assessment Handbook, CG 446-3) A-T-U	13. PHYSICAL AND CHEMICAL PROPER 13.1 Physical State at 15°C and 1 atm: 1 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: Data not ava 13.4 Freezing Point: Not pertinent
	L DESIGNATIONS	4. OBSERVABLE CHARACTERISTICS		12. HAZARD CLASSIFICATIONS Code of Federal Regulations: Not listed NAS Nazard Rating for Bulk Water Transportation: Not listed	<ul> <li>13.5 Critical Temperature: Not pertinent</li> <li>13.6 Critical Pressure: Not pertinent</li> <li>13.7 Specific Gravity: Data not available</li> <li>13.8 Liquid Surface Tension: (est.) 25 dynesvem = 0.025 N m at 2</li> </ul>
1 Synonyms: No co 2 Coast Guard Cor Petro 3 Chemical Formu	mpatibility Classification: oleum oil star: Not applicable ations Numerical	4.1 Physical State (as shipped): Liquid 4.2 Color: Data not available 4.3 Odor: Data not available	12.3	NFPA Hezard Classifications: Not listed	13.10 Vapor (Gas) Specific Gravity: Not pertinent 13.11 Ratio of Specific Heats of Vapor (Gravity Processing Specific Heats of Vapor (Gravity Processing Specific Heat of Vaporization:
1. Synonyma: No c. 2. Coast Guard Corpetr 3. Chemical Formu. 4. IMCO/United Na Designation: No 2. Symptoms Follon will occur. 3. Treatment for Ex. and water: EYE A Toxicity by Inhels. 5. Short-Term Inha. 6. Toxicity by Inges. 7. Late Toxicity: Do	propertibility Classification: oleum oil size Not applicable attors Numerical ot listed  5. HEALTH tive Equipment: Goggles or fr wing Exposure: If liquid is ing exposure: INGESTION: Do no exposure: INGESTION: D	Liquid 4.2 Color: Data not available 4.3 Odor: Data not available 4.3 HAZARDS ace shield ace shield ace stick an increased frequency of bowel movements but induce vomiting; SKIN: Wipe off, wash with soap st 15 min. b): No single TLV applicable able	-	NFPA Hazard Classifications: Not listed	(est.) 50 dynes/cm = 0.05 N/m at 20 13.10 Vapor (Gas) Specific Gravity: Not pertunent 13.11 Ratio of Specific Heats of Vapor (Gas) Not pertunent

#### OILS: CRUDE

	Oily Nguid	Dark Acrid odor -			
	Floats on water. Flamma	able vapor may be produced.			
Call fire depa Avoid contact Isolate and re	e if possible. Keep people away. rtment. t with liquid. move discharged material. sealth and pollution control agencies.	•			
Fire	Combestible.  Extinguish with dry chemical, foam, or carbon dioxide.  Water may be ineffective on fire.  Cool exposed containers with water.				
CALL FOR MEDICAL AID. VAPOR Not irritating to eyes, nose, or throat.  LIQUID Irritating to skin and eyes. Remove contaminated clothing and shoes. Flush affected areas with plenty of water. IF IN EYES, hold eyelids open and flush with plenty of water.  EXPOSURE					
Water Pollution	HARMFUL TO AQUATIC LIFE   Fouling to shorehine. May be dangerous if it enters wate Notify local health and wildlife of Notify operators of nearby water i	ficials.			
(See Response Mechanica Should be	ONSE TO DISCHARGE  Methodo Hendbook, CG 446-4) all containment removed and physical treatment	2. LABELS  No hazard label required by  Code of Federal Regulations			
	AICAL DESIGNATIONS	4. OBSERVABLE CHARACTERISTICS			
3.1 Synonyms: 3.2 Coast Guard 3.3 Chemical Fo 3.4 IMCO/Unite		4.1 Physical State (as shipped): Liquid 4.2 Color: Dark 4.3 Odor: Offensive: tarry			

6. FIRE HAZARDS	8. WATER POLLUTION
6.1 Flash Point: Data not available	
	8.1 Aquatic Toxicity:
6.2 Flammable Limits in Air: Data not available	3 ppm/*/fresh water fish/toxic/fresh water 1 200 ppm/24 hr/corals: porites/20-90%
6.3 Fire Extinguishing Agents: Dry	normal response/salt water
chemical, foam, or carbon dioxide	*Time period not specified.
6.4 Fire Extinguishing Agents Not to be Used: Water may be ineffective	8.2 Waterlowi Toxicity: Data not available
6.5 - Special Hazards of Combustion Products:	8.3 Biological Oxygen Demand (BOD):
Not pertinent	Data not available
6.6 Behavior in Fire: Not pertinent	8.4 Food Chain Concentration Potential:
6.7 Ignition Temperature: Data not available	None
•	
6.8 Electrical Hazard: Not pertinent	
6.9 Burning Rate: 4 mm/min.	9. SELECTED MANUFACTURERS
	1. Exxon Co.
	Houston, Tex. 77001
	2. Shell Oil Co.
	1 Shell Plaza
	Houston, Tex. 77001
	. 3. Sun Oil Co.
	St. Davids, Pa. 19087
7. CHEMICAL REACTIVITY	
7.1 Reactivity with Water: No reaction	
7.2 Reactivity with Common Materials:	
No reaction	l
7.3 Stability During Transport: Stable	i
7.4 Neutralizing Agents for Acids and	
Caustics: Not pertinent	
7.5 Polymerization: Not pertinent	
7.6 Inhibitor of Polymerization: Not pertinent	10 CHIDDING INCODUCTION
, , , , , , , , , , , , , , , , , , ,	10. SHIPPING INFORMATION
	10.1 Grades or Purity: Wide variety,
	depending on oil field where produced.
	10.2 Storage Temperature: Ambient
	10.3 Inert Atmosphere: No requirement
*	10.4 Venting: Open (flame arrester)
11. HAZARD ASSESSMENT CODE	13. PHYSICAL AND CHEMICAL PROPERTIES
11. HAZARD ASSESSMENT CODE (See Hazard Assessment Handbook, CG 446-3)	13. PHYSICAL AND CHEMICAL PROPERTIES 13.1 Physical State at 15°C and 1 atm: Liquid
	13.1 Physical State at 15°C and 1 atm: Liquid
(See Hazard Assessment Handbook, CG 446-3)	13.1 Physical State at 15°C and 1 atm: Liquid . 13.2 Molecular Weight: Not pertinent
(See Hazard Assessment Handbook, CG 446-3)	13.1 Physical State at 15°C and 1 atm: Liquid
(See Hazard Assessment Handbook, CG 446-3)	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 90->750°F = 32->400°C = 305->673°K
(See Hazard Assessment Handbook, CG 446-3) A-T-U	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 90→750°F = 32→400°C = 305→673°K  13.4 Freezing Point: Not pertinent
(See Hazard Assessment Handbook, CG 446-3) A-T-U  12. HAZARD CLASSIFICATIONS	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 90.→750°F = 32.→400°C = 305.→673°K 13.4 Freezing Point: Not pertinent 13.5 Critical Temperature: Not pertinent
(See Hazard Assessment Handbook, CG 446-3) A-T-U  12. HAZARD CLASSIFICATIONS 12.1 Code of Federal Regulations:	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 90 → 750°F = 32 → >400°C = 305 → 673°K 13.4 Freezing Point: Not pertinent 13.5 Critical Temperature: Not pertinent 13.6 Critical Pressure: Not pertinent
(See Hazard Assessment Handbook, CG 446-3) A-T-U  12. HAZARD CLASSIFICATIONS  12.1 Code of Federal Regulations: Combustible liquid	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 90—>750°F = 32—>400°C = 305—>673°K 13.4 Freezing Point: Not pertinent 13.5 Critical Temperature: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.70 0.98 at 15°C
(See Hazard Assessment Handbook, CG 446-3) A-T-U  12. HAZARD CLASSIFICATIONS 12.1 Code of Federal Regulations:	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 90>750°F = 32>400°C = 305>673°K  13.4 Freezing Point: Not pertinent 13.5 Critical Pressure: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.70 0.98 at 15°C (liquid)
12.1 HAZARD CLASSIFICATIONS  12.1 Code of Federal Regulations: Combustible liquid  12.2 NAS Hazard Rating for Bulk Water Transportation:	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 90.→750°F = 32.→400°C = 305.→673°K 13.4 Freezing Point: Not pertinent 13.5 Critical Temperature: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.70 0.98 at 15°C (liquid) 13.8 Liquid Surface Tension: 24-38 dynes/cm
(See Hazard Assessment Handbook, CG 446-3) A-T-U  12. HAZARD CLASSIFICATIONS  12.1 Code of Federal Regulations: Combustible liquid  12.2 NAS Hazard Rating for Bulk Water Transportation: Category Rating	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 90 → 750°F = 32 → >400°C = 305 → 673°K  13.4 Freezing Point: Not pertinent 13.5 Critical Temperature: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.70 0.98 at 15°C (Inquid) 13.8 Liquid Surface Tension: 24 – 38 dynes/cm = 0.024 – 0.038 N/m at 20°C
(See Hazard Assessment Handbook, CG 446-3) A-T-U  12. HAZARD CLASSIFICATIONS  12.1 Code of Federal Regulations: Combustible liquid  12.2 NAS Hazard Rating for Bulk Water Transportation: Category Rating Fire	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 90 → 750°F = 32 → 2400°C = 305 → 673°K 13.4 Freezing Point: Not pertinent 13.5 Critical Temperature: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.70 0.98 at 15°C (liquid) 13.8 Liquid Surface Tension: 24 – 38 dynes/cm = 0.024 − 0.038 N/m at 20°C 13.9 Liquid-Water Interfacial Tension:
12.1 Code of Federal Regulations:  Computation: Computation: Camputation: Category Rating Fire	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 90>750°F = 32>400°C = 305>673°K 13.4 Freezing Point: Not pertinent 13.5 Critical Temperature: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.70 0.98 at 15°C (liquid) 13.8 Liquid Surface Tension: 2438 dynes/cm = 0.0240.38 N/m at 20°C 13.9 Liquid-Water Interfacial Tension: (est.) 50 dynes/cm = 0.05 N/m at 20°C
12. HAZARD CLASSIFICATIONS  12.1 Code of Federal Regulations: Combustible liquid  12.2 NAS Hazard Rating for Bulk Water Transportation: Category Rating Fire	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 90>750°F = 32>400°C = 305>673°K 13.4 Freezing Point: Not pertinent 13.5 Critical Temperature: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.70 0.98 at 15°C (liquid) 13.8 Liquid Surface Tension: 2438 dynes/cm = 0.0240.38 N/m at 20°C 13.9 Liquid-Water Interfacial Tension: (ext.)50 dynes/cm = 0.05 N/m at 20°C -13.10 Vapor (Gas) Specific Gravity:
12. HAZARD CLASSIFICATIONS  12.1 Code of Federal Regulations: Combustible liquid  12.2 NAS Hazard Rating for Bulk Water Transportation: Category Rating Fire	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 90—7750°F = 32—>400°C = 305→673°K  13.4 Freezing Point: Not pertinent 13.5 Critical Temperature: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.70 0.98 at 15°C (Inquid) 13.8 Liquid Surface Tension: 24—38 dynes/cm = 0.024—0.038 N/m at 20°C  13.9 Liquid-Water Interfacial Tension: (est.) 50 dynes/em = 0.05 N/m at 20°C  -13.10 Vapor (Gas) Specific Gravity: Not pertinent
12. HAZARD CLASSIFICATIONS  12.1 Code of Federal Regulations: Combustible liquid  12.2 NAS Hazard Rating for Bulk Water Transportation: Category Rating Fire	13.1 Physical State at 15°C and 1 atm: Liquid  13.2 Molecular Weight: Not pertinent  13.3 Boiling Point at 1 atm: 90—775°F  = 32 —>400°C = 305 →673°K  13.4 Freezing Point: Not pertinent  13.5 Critical Temperature: Not pertinent  13.6 Critical Pressure: Not pertinent  13.7 Specific Gravity: 0.70 0.98 at 15°C (liquid)  13.8 Liquid Surface Tension: 24—38 dynes/cm  = 0.024—0.038 N/m at 20°C  13.9 Liquid-Water Interfacial Tension: (ext. j.50 dynes/cm = 0.05 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent  13.11 Ratio of Specific Heats of Vapor (Gas):
(See Hazard Assessment Handbook, CG 446-3) A-T-U  12. HAZARD CLASSIFICATIONS  12.1 Code of Federal Regulations: Combustible liquid  12.2 NAS Hazard Rating for Bulk Water Transportation: Category Rating Fire 1-3 Health Vapor Irritant 0 Liquid or Solid Irritant 1 Poisons 1 Water Pollution Human Toxicity 1	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 90>750°F = 32>400°C = 305>673°K 13.4 Freezing Point: Not pertinent 13.5 Critical Temperature: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.70 0.98 at 15°C (liquid) 13.8 Liquid Surface Tension: 2438 dynes/cm = 0.0240.38 N/m at 20°C 13.9 Liquid-Water Interfacial Tension: (ext.) 50 dynes/cm = 0.05 N/m at 20°C -13.10 Vapor (Gas) Specific Gravity: Not pertinent 13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent
12. HAZARD CLASSIFICATIONS	13.1 Physical State at 15°C and 1 atm: Liquid  13.2 Molecular Weight: Not pertinent  13.3 Boiling Point at 1 atm: 90—775°F  = 32 —>400°C = 305 →673°K  13.4 Freezing Point: Not pertinent  13.5 Critical Temperature: Not pertinent  13.6 Critical Pressure: Not pertinent  13.7 Specific Gravity: 0.70 0.98 at 15°C (liquid)  13.8 Liquid Surface Tension: 24—38 dynes/cm  = 0.024—0.038 N/m at 20°C  13.9 Liquid-Water Interfacial Tension: (ext. j.50 dynes/cm = 0.05 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent  13.11 Ratio of Specific Heats of Vapor (Gas):
12. HAZARD CLASSIFICATIONS	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 90.—>750°F = 32.—>400°C = 305.—>673°K 13.4 Freezing Point: Not pertinent 13.5 Critical Temperature: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.70 0.98 at 15°C (liquid) 13.8 Liquid Surface Tension: 24- 38 dynes/cm = 0.024-0.038 N/m at 20°C 13.9 Liquid-Water Interfacial Tension: (est.) 50 dynes/cm = 0.05 N/m at 20°C 13.10 Vapor (Gas) Specific Gravity: Not pertinent 13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent 13.12 Latent Heat of Vaporization:
12. HAZARD CLASSIFICATIONS  12.1 Code of Federal Regulations: Combustible liquid  12.2 NAS Hazard Rating for Bulk Water Transportation: Category Rating Fire 1-3 Health Vapor Irritant 0 Liquid or Solid Irritant 1 Poisons 1 Water Pollution Human Toxicity 1 Aquatic Toxicity 2 Aesthetic Effect 4 Reactivity	13.1 Physical State at 15°C and 1 atm: Liquid  13.2 Molecular Weight: Not pertinent  13.3 Boiling Point at 1 atm: 90—775°F = 32—>400°C = 305→673°K  13.4 Freezing Point: Not pertinent  13.5 Critical Temperature: Not pertinent  13.6 Critical Pressure: Not pertinent  13.7 Specific Gravity: 0.70 0.98 at 15°C (liquid)  13.8 Liquid Surface Tension: 24—38 dynes/cm = 0.024—0.038 N/m at 20°C  13.9 Liquid-Water Interfacial Tension: (ext.) 50 dynes/cm = 0.05 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent  13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent  13.12 Latent Heat of Vaporization:  14.0—150 Btu/lb = 76—86 cat/g
12. HAZARD CLASSIFICATIONS	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 90>750°F = 32>400°C = 305>673°K 13.4 Freezing Point: Not pertinent 13.5 Critical Temperature: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.70 0.98 at 15°C (liquid) 13.8 Liquid Surface Tension: 2438 dynes/cm = 0.0240.38 N/m at 20°C 13.9 Liquid-Water Interfacial Tension: (est.) 50 dynes/em = 0.05 N/m at 20°C 13.10 Vapor (Gas) Specific Gravity: Not pertinent 13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent 13.12 Latent Heat of Vaporization: 140150 Btu/lb = 7686 cal/g = 3.23.6 × 10³ J/kg
12. HAZARD CLASSIFICATIONS  12.1 Code of Federal Regulations: Combustible liquid  12.2 NAS Hazard Rating for Bulk Water Transportation: Category Rating Fire 1-3 Health Vapor Irritant 0 Liquid or Solid Irritant 1 Poisons 1 Water Pollution Human Toxicity 1 Aquatic Toxicity 2 Aesthetic Effect 4 Reactivity	13.1 Physical State at 15°C and 1 atm: Liquid  13.2 Molecular Weight: Not pertinent  13.3 Boiling Point at 1 atm: 90.→750°F = 32 →>400°C = 305 →>673°K  13.4 Freezing Point: Not pertinent  13.5 Critical Temporature: Not pertinent  13.6 Critical Pressure: Not pertinent  13.7 Specific Gravity: 0.70 0.98 at 15°C (Inquid)  13.8 Liquid Surface Tension: 24- 38 dynes/cm = 0.024-0.038 N/m at 20°C  13.9 Liquid-Water Interfacial Tension: (est.) 50 dynes/cm = 0.05 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent  13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent  13.12 Latent Heat of Vaporization: 140—150 Btu/lb = 76 × 86 cul/g = 3.2 3.6 × 105 J/kg  13.13 Heat of Combustion: −18.252 Btu/lb
12. HAZARD CLASSIFICATIONS  12.1 Code of Federal Regulations: Combustible liquid  12.2 NAS Hazard Rating for Bulk Water Transportation: Category Rating Fire 1-3 Health Vapor Irritant 0 Liquid or Solid Irritant 1 Poisons 1 Water Pollution Human Toxicity 1 Aquatic Toxicity 2 Aesthetic Effect 4 Reactivity 0ther Chemicals 0 Water 0	13.1 Physical State at 15°C and 1 atm: Liquid  13.2 Molecular Weight: Not pertinent  13.3 Boiling Point at 1 atm: 90.—7750°F = 32.—>400°C = 305.—>673°K  13.4 Freezing Point: Not pertinent  13.5 Critical Temperature: Not pertinent  13.6 Critical Pressure: Not pertinent  13.7 Specific Gravity: 0.70 0.98 at 15°C (liquid)  13.8 Liquid Surface Tension: 24- 38 dynes/cm = 0.024-0.038 N/m at 20°C  13.9 Liquid-Water Interfacial Tension: (cs.) 50 dynes/cm = 0.05 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent  13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent  13.12 Latent Heat of Vaporization:   140-  150 Btu/lb = 76- 86 cal/g = 3.2 3.6 × 10³ J/kg  13.13 Heat of Combustion: -18,252 Btu/lb = -10.140 cal/g = -424.54 × 10⁵ J/kg
12. HAZARD CLASSIFICATIONS  12.1 Code of Federal Regulations: Combustible liquid  12.2 NAS Hazard Rating for Bulk Water Transportations: Category Rating Fire 1-3 Health Vapor Irritant 0 Liquid or Solid Irritant 1 Poisons 1 Water Pollution Human Toxicity 1 Aquatic Toxicity 2 Aesthetic Effect 4 Reactivity Other Chemicals 0 Water 0 Self-Reaction 0 Self-Reaction 0	13.1 Physical State at 15°C and 1 atm: Liquid  13.2 Molecular Weight: Not pertinent  13.3 Boiling Point at 1 atm: 90>750°F = 32>400°C = 305>673°K  13.4 Freezing Point: Not pertinent  13.5 Critical Temperature: Not pertinent  13.6 Critical Pressure: Not pertinent  13.7 Specific Gravity: 0.70 0.98 at 15°C (liquid)  13.8 Liquid Surface Tension: 2438 dynes/cm = 0.0240.38 N/m at 20°C  13.9 Liquid-Water Interfacial Tension: (est.) 50 dynes/cm = 0.05 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent  13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent  13.12 Latent Heat of Vaporization: 140150 Btu/lb = 7686 cal/g = 3.23.6 × 10°J/kg  13.13 Heat of Combustion: −18.252 Btu/lb = −10,140 cal/g = −424.54 × 10°J/kg  13.14 Heat of Decomposition: Not pertinent  13.15 Heat of Solution: Not pertinent
12.1 HAZARD CLASSIFICATIONS  12.1 Code of Federal Regulations: Combustible liquid  12.2 NAS Hazard Rating for Bulk Water Transportation: Category Rating Fire 1-3 Health Vapor Irritant 0 Liquid or Solid Irritant 1 Poisons 1 Water Pollution Human Toxicity 1 Aquatic Toxicity 2 Aesthetic Effect 4 Reactivity Other Chemicals 0 Water 0 Self-Reaction 0  12.3 NFPA Hazard Classifications: Category Classifications	13.1 Physical State at 15°C and 1 atm: Liquid  13.2 Molecular Weight: Not pertinent  13.3 Boiling Point at 1 atm: 90—7750°F = 32—>400°C = 305→673°K  13.4 Freezing Point: Not pertinent  13.5 Critical Temperature: Not pertinent  13.6 Critical Pressure: Not pertinent  13.7 Specific Gravity: 0.70 0.98 at 15°C (hquid)  13.8 Liquid Surface Tension: 24—38 dynes/cm = 0.024—0.038 N/m at 20°C  13.9 Liquid-Water Interfacial Tension: (est.) 50 dynes/cm = 0.05 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent  13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent  13.12 Latent Heat of Vaporization: 140—150 Btu/ib = 76—86 cal/g = 3.2 3.6 × 10°J/kg  13.13 Heat of Combustion: −18.252 Btu/ib = −10.140 cal/g = −424.54 × 10°J/kg  13.14 Heat of Decomposition: Not pertinent
12.1   12.   HAZARD CLASSIFICATIONS	13.1 Physical State at 15°C and 1 atm: Liquid  13.2 Molecular Weight: Not pertinent  13.3 Boiling Point at 1 atm: 90>750°F = 32>400°C = 305>673°K  13.4 Freezing Point: Not pertinent  13.5 Critical Temperature: Not pertinent  13.6 Critical Pressure: Not pertinent  13.7 Specific Gravity: 0.70 0.98 at 15°C (liquid)  13.8 Liquid Surface Tension: 2438 dynes/cm = 0.0240.38 N/m at 20°C  13.9 Liquid-Water Interfacial Tension: (est.) 50 dynes/cm = 0.05 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent  13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent  13.12 Latent Heat of Vaporization: 140150 Btu/lb = 7686 cal/g = 3.23.6 × 10°J/kg  13.13 Heat of Combustion: −18.252 Btu/lb = −10,140 cal/g = −424.54 × 10°J/kg  13.14 Heat of Decomposition: Not pertinent  13.15 Heat of Solution: Not pertinent
12. HAZARD CLASSIFICATIONS  12.1 Code of Federal Regulations: Combustible liquid  12.2 NAS Hazard Rating for Bulk Water Transportation: Category Rating Fire 1-3 Health Vapor Irritant 0 Liquid or Solid Irritant 1 Poisons 1 Water Pollution Human Toxicity 1 Aquatic Toxicity 2 Aesthetic Effect 4 Reactivity Other Chemicals 0 Water 0 Self-Reaction 0  12.3 NFPA Hazard Classifications: Category Classification  Category Classification  Category Classification  Category Classification	13.1 Physical State at 15°C and 1 atm: Liquid  13.2 Molecular Weight: Not pertinent  13.3 Boiling Point at 1 atm: 90>750°F = 32>400°C = 305>673°K  13.4 Freezing Point: Not pertinent  13.5 Critical Temperature: Not pertinent  13.6 Critical Pressure: Not pertinent  13.7 Specific Gravity: 0.70 0.98 at 15°C (liquid)  13.8 Liquid Surface Tension: 2438 dynes/cm = 0.0240.38 N/m at 20°C  13.9 Liquid-Water Interfacial Tension: (est.) 50 dynes/cm = 0.05 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent  13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent  13.12 Latent Heat of Vaporization: 140150 Btu/lb = 7686 cal/g = 3.23.6 × 10°J/kg  13.13 Heat of Combustion: −18.252 Btu/lb = −10,140 cal/g = −424.54 × 10°J/kg  13.14 Heat of Decomposition: Not pertinent  13.15 Heat of Solution: Not pertinent
12.1   12.   HAZARD CLASSIFICATIONS	13.1 Physical State at 15°C and 1 atm: Liquid  13.2 Molecular Weight: Not pertinent  13.3 Boiling Point at 1 atm: 90>750°F = 32>400°C = 305>673°K  13.4 Freezing Point: Not pertinent  13.5 Critical Temperature: Not pertinent  13.6 Critical Pressure: Not pertinent  13.7 Specific Gravity: 0.70 0.98 at 15°C (liquid)  13.8 Liquid Surface Tension: 2438 dynes/cm = 0.0240.38 N/m at 20°C  13.9 Liquid-Water Interfacial Tension: (est.) 50 dynes/cm = 0.05 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent  13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent  13.12 Latent Heat of Vaporization: 140150 Btu/lb = 7686 cal/g = 3.23.6 × 10°J/kg  13.13 Heat of Combustion: −18.252 Btu/lb = −10,140 cal/g = −424.54 × 10°J/kg  13.14 Heat of Decomposition: Not pertinent  13.15 Heat of Solution: Not pertinent
12. HAZARD CLASSIFICATIONS  12.1 Code of Federal Regulations: Combustible liquid  12.2 NAS Hazard Rating for Bulk Water Transportation: Category Rating Fire 1-3 Health Vapor Irritant 0 Liquid or Solid Irritant 1 Poisons 1 Water Pollution Human Toxicity 1 Aquatic Toxicity 2 Aesthetic Effect 4 Reactivity Other Chemicals 0 Water 0 Self-Reaction 0  12.3 NFPA Hazard Classifications: Category Classification  Category Classification  Category Classification  Category Classification	13.1 Physical State at 15°C and 1 atm: Liquid  13.2 Molecular Weight: Not pertinent  13.3 Boiling Point at 1 atm: 90>750°F = 32>400°C = 305>673°K  13.4 Freezing Point: Not pertinent  13.5 Critical Temperature: Not pertinent  13.6 Critical Pressure: Not pertinent  13.7 Specific Gravity: 0.70 0.98 at 15°C (liquid)  13.8 Liquid Surface Tension: 2438 dynes/cm = 0.0240.38 N/m at 20°C  13.9 Liquid-Water Interfacial Tension: (est.) 50 dynes/em = 0.05 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent  13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent  13.12 Latent Heat of Vaporization: 140150 Btu/lb = 7686 cal/g = 3.23.6 × 10³ J/kg  13.13 Heat of Combustion: −18,252 Btu/lb = −10.140 cal/g = −424.54 × 10³ J/kg  13.14 Heat of Decomposition: Not pertinent  13.15 Heat of Solution: Not pertinent
12. HAZARD CLASSIFICATIONS  12.1 Code of Federal Regulations: Combustible liquid  12.2 NAS Hazard Rating for Bulk Water Transportation: Category Rating Fire 1-3 Health Vapor Irritant 0 Liquid or Solid Irritant 1 Poisons 1 Water Pollution Human Toxicity 1 Aquatic Toxicity 2 Aesthetic Effect 4 Reactivity Other Chemicals 0 Water 0 Self-Reaction 0  12.3 NFPA Hazard Classifications: Category Classification  Category Classification  Category Classification  Category Classification	13.1 Physical State at 15°C and 1 atm: Liquid  13.2 Molecular Weight: Not pertinent  13.3 Boiling Points at 1 atm: 90.→750°F  23.2 →400°C = 305.→673°K  13.4 Freezing Point: Not pertinent  13.5 Critical Temperature: Not pertinent  13.6 Critical Pressure: Not pertinent  13.7 Specific Gravity: 0.70 0.98 at 15°C (Inquid)  13.8 Liquid Surface Tension: 24-38 dynes/cm  = 0.024-0.038 N/m at 20°C  13.9 Liquid-Water Interfacial Tension: (est.)50 dynes/cm = 0.05 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent  13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent  13.12 Latent Heat of Vaporization:  140—150 Btu/lb = 76-86 cal/g  = 3.2 3.6 × 10°3 J/kg  13.14 Heat of Combustion: −18,252 Btu/lb  = −10,140 cal/g = −424.54 × 10°3 J/kg  13.15 Heat of Solution: Not pertinent  13.16 Heat of Polymerization: Not pertinent
12. HAZARD CLASSIFICATIONS  12.1 Code of Federal Regulations: Combustible liquid  12.2 NAS Hazard Rating for Bulk Water Transportation: Category Rating Fire 1-3 Health Vapor Irritant 0 Liquid or Solid Irritant 1 Poisons 1 Water Pollution Human Toxicity 1 Aquatic Toxicity 2 Aesthetic Effect 4 Reactivity Other Chemicals 0 Water 0 Self-Reaction 0 Self-Reaction 0  12.3 NFPA Hazard Classifications: Category Classification Health Hazard (Blue) 1 Flammability (Red) 3 Reactivity (Yellow) 0	13.1 Physical State at 15°C and 1 atm: Liquid  13.2 Molecular Weight: Not pertinent  13.3 Boiling Points at 1 atm: 90.→750°F  23.2 →400°C = 305.→673°K  13.4 Freezing Point: Not pertinent  13.5 Critical Temperature: Not pertinent  13.6 Critical Pressure: Not pertinent  13.7 Specific Gravity: 0.70 0.98 at 15°C (Inquid)  13.8 Liquid Surface Tension: 24-38 dynes/cm  = 0.024-0.038 N/m at 20°C  13.9 Liquid-Water Interfacial Tension: (est.)50 dynes/cm = 0.05 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent  13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent  13.12 Latent Heat of Vaporization:  140—150 Btu/lb = 76-86 cal/g  = 3.2 3.6 × 10°3 J/kg  13.14 Heat of Combustion: −18,252 Btu/lb  = −10,140 cal/g = −424.54 × 10°3 J/kg  13.15 Heat of Solution: Not pertinent  13.16 Heat of Polymerization: Not pertinent

### OILS: DIESEL

Fuel ed 2-D Fuel ed 2-D  Stop discharge Call fire deput Avoid contact Isolate and re	Floats on water.  Stop discharge if possible. Call fire department. Avoid contact with liquid. Isolate and remove discharged material. Notify local health and pollution control agencies.		6.2 6.3 6.4 6.5	6. FIRE HAZARDS Flash Points: (1-D) 100° F.C.C.; (2-D) 125° F.C.C. Flammable Limits in Air: 1.3—6.0 vol. % Fire Extinguishing Agents: Dry chemical, foam, or carbon dioxide Fire Extinguishing Agents Not to be Used: Water may be ineffective Special Hazards of Combustion Products: Not pertinent Behavior in First: Not pertinent. Ignition Temporature: (1-D) 350-625° F	8. WATER POLLUTION  8.1 Aquastic Toxicity:  204 mg/l /24 hr/juvenite American shad/ TL <sub>m</sub> /salt water  8.2 Waterfowl Toxicity: Data not available  8.3 Blological Oxygen Demend (BOD): Data not available  8.4 Food Chain Concentration Potential: None	
Fire	Combustible. Extinguish with dry chemical. foam, or carbon dioxide. Water may be ineffective on fire. Cool exposed containers with water.		Combustible. (2-D) 490-545° F  Extinguish with dry chemical, foam, or carbon dioxide. (2-R) 480-545° F  After may be ineffective on fire. 6.8 Electrical Hazard: Not pertinent		9. SELECTED MANUFACTURERS  1. Exxon Co. Houston. Tex. 77001  2. Shell Oil Co. 1 Shell Plaza Houston. Tex. 77001  3. Sun Oil Co.	
Exposure	CALL FOR MEDICAL AID. LIQUID LITISTING to skin and eyes. Harmful if swallowed. Remove contaminated clothin Flush affected areas with plent IF IN EYES. hold eveilds oper IF SWALLOWED and victim a or milk. DO NOT INDUCE VOMITING	ty of water. n and flush with plenty of water. s CONSCIOUS, have victim drink water	7.2 7.3 7.4 7.5	7. CHEMICAL REACTIVITY Reactivity with Water: No reaction Reactivity with Common Materials: No reaction Stability During Transport: Stable Neutralizing Agents for Acids and Caustics: Not pertinent Polymerization: Not pertinent Inhibitor of Polymerization: Not pertinent	10. SHIPPING INFORMATION  10.1 Grades or Purity: Diesel Fuel I-D (ASTM): Diesel Fuel 2-D (ASTM)  10.2 Storage Temperature: Ambient  10.3 Inert Atmosphere: No requirement	
Water Pollution	Dangerous to aquatic life in hi Fouling to shorekine. May be dangerous if it enters Notify local health and widlit Notify operators of nearby wa	water intakes. e officials.		•	10.4 Venting: Open (flume arrester)	
(See Response Mett Mechanical cor Should be remo		2. LABELS  No hazard label required by  Code of Federal Regulations		11. HAZARD ASSESSMENT CODE (See Hazard Assessment Mandbook, CG 446-3) A-T-U	13. PHYSICAL AND CHEMICAL PROPERTIES     13.1 Physical State at 15°C and 1 atm: 1.iquid     13.2 Molecular Weight: Not pertinent     13.3 Boiling Point at 1 atm: 550 640°F = 288 338°C = 561 612°K     13.4 Freezing Point: 0 to = 30°F	
3.1 Synonyms: Fuel Fuel 3.2 Coast Guard Co Petr	Oil 2-D mpatibility Classification: oleum oil ila: Not applicable ations Numerical	4. OBSERVABLE CHARACTERISTICS 4.1 Physical State (as shipped): Liquid 4.2 Color: Light brown 4.3 Odor: Like fuel oil	12.2	12. HAZARD CLASSIFICATIONS Code of Federal Regulations: Combustible liquid NAS Hazard Rating for Bulk Water Transportation: Not listed NFPA Hazard Classifications: Category Classification Health Hazard (Blue)	= -18 to -34°C = 255 to 239°K  13.5 Critical Temperature: Not pertinent  13.6 Critical Pressure: Not pertinent  13.7 Specific Gravity: 0.876 at 20°C (liquid)  13.8 Liquid Surface Tension: (est.) 25 dynes/em = 0.025 N/m at 20°C  13.9 Liquid-Water Interfacial Tension: (est.) 50 dynes/em = 0.05 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent  13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent	
5.2 Symptoms Followill occur. 5.3 Treatment for Example of the second occur. 5.4 Toxicity by Inhal 5.5 Short-Term Inha 5.6 Toxicity by Inger 5.7 Late Toxicity: D 5.8 Vapor (Gas) Irrit system if press 5.9 Liquid or Solid I	wing Exposure: If liquid is in trocure: INGESTION: do N. ES; wash with copious amount atton (Threshold Limit Value liation Limits: Data not available: Data not available: Data not available: LD <sub>0</sub> 5 to 15 g/bata not available: All characteristics: Vapors ent in high concentrations. The writtent Characteristics: Mining y cause smarting and reddening	gested, an increased frequency of bowel movements  OT induce vomiting, SKIN: wipe off, wash with soap s of water for at least 15 min.  I): No single TLV applicable, able kg  cause a slight smarting of the eyes or respiratory effect is temporary. imum hazard, If spilled on clothing and allowed		NC	13.12 Latent Heat of Vaporization: Not pertunent  13.13 Heat of Combustion: (est.) = 18.000 Btu th = -10.000 cat g = -420 × 10° J kg  13.14 Heat of Decomposition: Not pertunent  13.15 Heat of Solution: Not pertunent  13.16 Heat of Polymerization: Not pertunent  (Continued on pages 5 and 6)	

recycled paper

# OILS, EDIBLE: SOYA BEAN

Mechanical containment Should be removed Chemical and physical treatment  No hazard label required by Code of Federal Regulations  13. Boiling Point at 1 atm: Very high 13. Bright Freezing Point at 1 atm: Very high 13. Critical Pressure: Not pertinent 13. Critical Press							
Exposure    Comment of the Comment o	Stop discharge if pc Call fire departmen   Solate and remove	Floats on water.		6.2 6.3 6.4	Flash Point: 540°F C.C. Flammable Limits in Air: Data not available Fire Extinguishing Agents: Dry chemical, foam, or carbon dioxide Fire Extinguishing Agents Not to be Used: Water or foam may cause frothing. Special Mazards of Combustion Products:	8.1 Aquatic Toxicity: Data not available 8.2 Waterfowl Toxicity: Data not available 8.3 Biological Oxygen Demand (BOD): 39%, 5 days 8.4 Food Chain Concentration Potential:	
Committee Comm	Notify local health	and pollution control age	ncies.	6.7	Behavior in Fire: Not pertinent Ignition Temperature: 833°F		
Exposure  Exposure    The Comment of Comment Selection Comment Sel	Ext Wat Coo	Extinguish with dry chemical. [oam or carbon dioxide Water may be ineffective on file. Cool exposed containers with water.		ith dry chemical, foam or carbon dioxide.  ineffective on fire.  6.9 Burning Rate: Data not available		Ashland Oil Co.     Chemical Products Division     Peoria, III. 61601     A. E. Staley Manufacturing Co.     Decatur, III. 62525	
### Pollution    Fifer of law concentrations on squasic life is unknown.		harmful.	-	7.2 7.3 7.4 7.5	Reactivity with Water: No reaction Reactivity with Common Materials: No reaction Stability During Transport: Stable Neutralizing Agents for Acids and Caustics: Not pertinent Polymerization: Not pertinent	10. SHIPPING INFORMATION 10.1 Gradee or Purity: Data not available 10.2 Storage Temperature: Ambient	
See Placegous tendon frombook, G. sted.     Mechanical contamment     Should be removed     Code of Federal Regulations	Pollution Foundation	ling to shoreline.  'be dangerous if it enters tify local health and wildl tify operators of nearby w	water intakes. ite of lictals. yater intakes.		11 HAZADD ASSESSMENT CODE		
3. CHEMICAL DESIGNATIONS 3. Synonyms: Soybean oil 3. Coast Guard Competibility Classification: Exter 4. Observable (as shipped): Liquid 4. Color: Paleyellow Category Classification: Category Classification: Designation: Not listed  5. HEALTH HAZARDS  5. HEALTH HAZARDS  5. Personal Protective Equipment: Goggles or face shield. 5. Symptoms Following Exposure: Note—is a food. 5. Treatment for Exposure: Eyes: flush with water for at least 15 min. 5. Toxicity by Inhalation Limits: Not pertinent 5. Late Toxicity: None 5. Vapor (Gas) Irritant Characteristics: None 5. Uquid or Solid Irritant Characteristics: None 5. Upper (Gas) Irritant Characteristics: None 5. Uquid or Solid Irritant Characteristics: None 5. Upper (Gas) Irritant Characteristic	(See Response Methods Han Mechanical containm Should be removed	ndbook, CG 448-4) ent	No hazard label required by		(See Hazard Assessment Handbook, CG 446-3)	13.1 Physical State at 15°C and 1 atm: Enqui 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: Very high 13.4 Freezing Point: -4°F = -20°C = 253 k	
NOTES	3.1 Synonyms: Soybean of 3.2 Coast Guard Competit Exter 3.3 Chemical Formula: N 3.4 IMCO/United Nationa Designation: Not listed 5.1 Personal Protective Ec 5.2 Symptoms Following I 5.3 Treatment for Exposus 5.4 Toxicity by inhalation 5.5 Short-Term inhalation 5.6 Toxicity by ingestion: 5.7 Late Toxicity: None 5.8 Vapor (Gas) Irritant C 5.9 Liquid or Solid Irritant	5. HEALTI quipment: Goggles or f Exposure: None—is a l Threshold Limit Value None haracteristics: None I Characteristics: None	4.1 Physical State (as shipped): Liquid 4.2 Color: Pale yellow 4.3 Odor: Weak  H HAZARDS are shield. food. ster for at least 15 min. D: Not pertinent	12.2	Code of Federal Regulations: Not Instel  NAS Hazard Rating for Bulk Water  Transportation: Not Instel  NFPA Hazard Classifications:  Category Classification  Health Hazard (Blue)	13.6 Critical Pressure: Not pertinent  13.7 Specific Gravity: 0.92 = 0.93 at 18°C (figurd)  13.8 Liquid Surface Tension: (est.) 28 dynes rem = 0.025 N in at 20°C  13.9 Liquid-Water Interfacial Tension: (est.) 80 dynes cm = 0.08 N in at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent  13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent  13.12 Latent Heat of Vaporization: Not pertinent  13.13 Heat of Combustion: (est.) = 16.000 Bru = -8.70 cat/g = -371 × 10°J kg  13.14 Heat of Decomposition: Not pertinent  13.15 Heat of Solution: Not pertinent  13.16 Heat of Polymerization: Not pertinent	
					NI.	OTES	

### OILS, EDIBLE: VEGETABLE

Common Bynony Stop dischar	Oily liquid Floats on water.	Pale yellow Weak, fatty odor	6.2 6.3	6. FIRE HAZARDS Fleeh Point: 610°F O.C. Flemmable Limits in Air: Data not available Fire Extinguishing Agenta: Dry chemical, foam, or carbon dioxide Fire Extinguishing Agenta Not to be Used:	8. WATER POLLUTION 8.1 Aquesic Toxicity: Data not available 8.2 Waterfowl Toxicity: Data not available 8.3 Biological Oxygen Domand (BOD): Data not available 8.4 Food Chain Concentration Potential:
Call fire dep Isolate and a	artment. remove discharged material. health and pollution control as	gencies.	6.5	Water may be ineffective.  Special Hazarda of Combustion Products: Not pertinent. Behavior in First: Not pertinent Ignition Temperature: Data not available.	None
Fire	Combustible. Extinguish with dry chemic Water may be ineffective or Cool exposed containers wi	fire.	6.8	Electrical Hazard: Not pertinent Burning Rate: Data not available	9. SELECTED MANUFACTURERS  1. Ashland Oil Co. Chemical Products Division Peoria, III. 61601  2. Sherwin-Williams Co. 101 Prospect Ave.
Exposure	Not harmful.		7.2	No reaction  Stability During Transport: Stable  Neutralizing Agents for Acids and  Caustics: Not pertinent  Polymerization: Not pertinent	Cleveland, Ohio 44101  3. A. E. Staley Manufacturing Co. Decatur, III. 62525  10. SHIPPING INFORMATION 10.1 Gradee or Purity: Data not available
Water Pollution	Effect of low concentration Fouling to shoreline. May be dangerous if it enter Notify local health and wik Notify operators of nearby	s water intakes. Hife officials.			10.2 Storage Temperature: Ambient 10.3 Inert Atmosphere: No requirement 10.4 Venting: Open (flame arrester)
(See Response Metho Mechanical cont Should be remov		2. LABELS  No hazard label required by  Code of Federal Regulations		11. HAZARD ASSESSMENT CODE (See Hazard Assessment Mandbook, CG 446-3) A-T-U  12. HAZARD CLASSIFICATIONS	13. PHYSICAL AND CHEMICAL PROPERTIES 13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: Very high 13.4 Freezing Point: Not pertinent 13.5 Critical Temperature: Not pertinent
3.1 Synonyms: No co	npetibility Classification:	4. OBSERVABLE CHARACTERISTICS 4.1 Physical State (as shipped): Liquid 4.2 Color: Colorless to pale yellow 4.3 Odor: Weak fatty	12.2	Code of Federal Regulations: Not listed  NAS Hazard Rating for Bulk Water Transportation: Not listed  NFPA Hazard Classifications: Category Classification  Health Hazard (Blue) 0  Flammability (Red) 1  Reactivity (Yellow) 0	13.6 Critical Pressure: Not pertinent  13.7 Specific Gravity: 0.92 at 20°C (liquid)  13.8 Liquid Surface Tension: (ext.) 25 dynes/cm = 0.025 N/m at 20°C  13.9 Liquid-Water Interfacial Tension: (ext.) 30 dynes/cm = 0.05 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent  13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent  13.12 Latent Heat of Vaporization: Not pertinent
5.2 Symptoms Follow 5.3 Treatment for Exp 5.4 Toxicity by Inhals 5.5 Short-Term Inhal 5.6 Toxicity by Inges 5.7 Late Toxicity: No 5.8 Vapor (Gas) Irrita	ve Equipment: Goggles or f ving Exposure: None—is a i posure: EYES: flush with wa stion (Threshold Limit Value atton Limits: Not pertunent tion: None one ant Characteristics: None ritant Characteristics: None	ood. ster for at least 15 min. ●): Not pertinent			13.13 Heat of Combustion: (est.) = 16.000 Btu/lb = -8.870 cal/g = -371 × 10° J/kg  13.14 Heat of Decomposition: Not pertinent  13.15 Heat of Solution: Not pertinent  13.16 Heat of Polymerization: Not pertinent
5.10 Oper Infeshold:	DATA NOL AVAITABLE			NC	OTES

### OILS, FUEL: NO. 1

Commun Synony Kerusian Kerusian Rango eli JP-1	Watery liquid Floats on water.	Colorinas Keroneus edor				
Stop discharge if possible. Call fire department. Avoid contact with liquid. Isolate and remove discharged material. Notify local health and pollution control agencies.						
Fire	Combustible.  Extinguish with dry chemical, foam or carbon dioxide.  Water may be ineffective on fire.  Cool exposed containers with water.					
Exposure	CALL FOR MEDICAL AID: LIQUID Irritating to skin and eyes. Harmful if swallowed.  Remore contammated clothing and shoes. Flush affected areas with pienty of water. IF IN EYES, hold evelids open and flush with pienty of water. IF SWALLOWED and victim is CONSCIOUS, have victim drink water or mik DO NOT INDUCE VOMITING.  EXPOSURE					
Water Pollution	Dangerous to aquatic life in his Fouling to shoreline. May be dangerous if it enters w Notify local health and widdlif Notify operators of nearby wa	rater intakes. e officials.				
(See Response Me Mechanical co Should be rem		LABELS  No hazard label required by Code of Federal Regulations				
3. CHEMICAL DESIGNATIONS 3.1 Synonyme: JP-1 Kerosene Kerosine Range oil 3.2 Coast Guard Compatibility Classification: Petroleum oil 3.3 Chemical Formula: Not applicable 1.4 IMCO/United Nations Numerical Designation: 3.3/1/233						
5. HEALTH HAZARDS  5.1 Personal Protective Equipment: Protective gloves; goggles or face shield.  5.2 Symptoms Following Exposure: INGESTION causes irritation of gastrointestinal tract: pulmonary tract irritation secondary to exhalation of vapors. ASPIRATION causes severe lung irritation with coughing, gagging, dyspnea, substernal distress, and rapidly developing pulmonary edema; signs of bronchopneumonia and pneumonitis appear later; minimal central nervous system depression.  5.3 Treatment for Exposure: INGESTION: do NOT lavage or induce vomitting; call physician. ASPIRATION: enforce bed rest; administer oxygen; call physician. EYES: wash with plenty of water. SKIN: wipe off and wash with soup and water.  5.4 Toxicity by Inhalation (Threshold Limit Value): 200 ppm (suggested)  5.5 Short-Term Inhalation Limits: Data not available  5.6 Toxicity: Data not available  5.7 Late Toxicity: Data not available  5.8 Vapor (Gas) Irritant Characteristics: Vapors cause a slight smarting of the eyes or respiratory system if present in high concentrations. The effect is temporary.  5.9 Liquid or Solid Irritant Characteristics: Minimum hazard. If spilled on clothing and allowed						
	ay cause smarting and reddening					

1	6. FIRE HAZARDS	8. WATER POLLUTION
6.1	Flash Point: 100° F C.C.	8.1 Aquatic Toxicity:
6.2	Flemmable Limits in Air: 0.7%—5%	2990 ppm/24 hr/bluegill/TLm/fresh water
6.3	Fire Extinguishing Agents: Dry chemical,	8.2 Waterlowi Toxicity: Data not available  8.3 Biological Overse Demond (BOD):
6.4	foam, or carbon dioxide Fire Extinguishing Agents Not to be Used:	8.3 Biological Oxygen Demand (BOD): 53%, 5 days
6.4	Water may be ineffective	8.4 Food Chain Concentration Potential:
6.5	Special Hazards of Combustion Products:	None
	Not pertinent	
6.6	Behavior in Fire: Not pertinent Ignition Temperature: 444° F	
6.7 6.8	Ignition Temperature: 444°F Electrical Hazard: Not pertinent	
6.9	Burning Rate: 4 mm/min.	Q CELECTER MANUFACTURES
	- •	9. SELECTED MANUFACTURERS  1. Atlantic Richfield
		717 Fifth Ave.
1		New York, N. Y. 10022
		2. Shell Oil Co. I Shell Plaza
		1 Shell Plaza 1 Houston, Tex. 77001
		3. Sun Oil Co.
	7. CHEMICAL REACTIVITY	St. Davids, Pa. 19087
7.1	Reactivity with Water: No reaction	
7.2	Reactivity with Common Materials: No reaction	
7.3	Stability During Transport: Stable	
7.4	Neutralizing Agents for Acids and	
l	Caustics: Not pertinent	
7.5	Polymerization: Not pertinent	
7.6	Inhibitor of Polymerization: Not pertinent	10. SHIPPING INFORMATION
		10.1 Grades or Purity: Light hydrocarbon distillate: 100%
		10.2 Storage Temperature: Ambient
		10.3 Inert Atmosphere: No requirement
		10.4 Venting: Open (flame arrester)
		l .
	11 HA7ARD ASSESSMENT CODE	13. PHYSICAL AND CHEMICAL PRODUCTIES
	11. HAZARD ASSESSMENT CODE (See Hazard Assessment Mandbook, CG 446-3)	13. PHYSICAL AND CHEMICAL PROPERTIES 13.1 Physical State at 15°C and 1 atm: Liquid
		l .
	(See Hazard Assessment Handbook, CG 446-3)	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertunent 13.3 Boiling Point at 1 atm: 380 560°F
	(See Hazard Assessment Handbook, CG 446-3)	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 380 560°F = 193 293°C = 466 566°K
	(See Hazard Assessment Handbook, CG 446-3)	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertunent 13.3 Boiling Point at 1 atm: 380 560°F
12.1	(See Hazard Assessment Handbook, CG 446-3) A-T-U  12. HAZARD CLASSIFICATIONS	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertunent 13.3 Boiling Point at 1 atm: 380 560°F = 193 293°C = 46n 566°K 13.4 Freezing Point: -45 to -55° F = -43 to -48°C = 230 to 225°K 13.5 Critical Temperature: Not pertunent
	(See Hazard Assessment Mandbook, CG 446-3) A-T-U  12. HAZARD CLASSIFICATIONS Code of Federal Regulations: Not listed	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 380 560°F = 193 293°C = 46n 566°K  13.4 Freezing Point: -45 to -55° F = -43 to -48°C = 230 to 225°K  13.5 Critical Temperature: Not pertinent 13.6 Critical Pressure: Not pertinent
12.1	(See Hazard Assessment Mandbook, CG 446-3) A-T-U  12. HAZARD CLASSIFICATIONS Code of Federal Regulations: Not listed NAS Hazard Rating for Bulk Water	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 380 560°F = 193 293°C = 466 566°K 13.4 Freezing Point: -45 to -55° F = -43 to -48°C = 230 to 225° K 13.5 Critical Temperature: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.81 0.85 at 15°C
	(See Hazard Assessment Mandbook, CG 446-3) A-T-U  12. HAZARD CLASSIFICATIONS Code of Federal Regulations: Not listed	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 380 560°F = 193 293°C = 46n 566°K  13.4 Freezing Point: -45 to -55° F = -43 to -48°C = 230 to 225°K  13.5 Critical Temperature: Not pertinent 13.6 Critical Pressure: Not pertinent
	(See Hazard Assessment Handbook, CG 446-3) A-T-U  12. HAZARD CLASSIFICATIONS Code of Federal Regulations: Not listed NAS Hazard Rating for Bulk Water Transportation:	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 380 560°F = 193 293°C = 466 566°K  13.4 Freezing Point: -45 to -55° F = -43 to -48°C = 230 to 225°K  13.5 Critical Temperature: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.81 0.85 at 15°C (figuid)  13.8 Liquid Surface Tension: 23 32 dynes/cm = 0.023 0.032 N/m at 20°C
	12. HAZARD CLASSIFICATIONS Code of Federal Regulations: Not listed NAS Hazard Rating for Bulk Water Transportation: Category Rating Fire 2 Health	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 380 560°F = 193 293°C = 466 566°K  13.4 Freezing Point:45 to55° F =43 to48°C = 230 to 225° K 13.5 Critical Temperature: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.81 0.85 at 15°C (fiquid) 13.8 Liquid Surface Tension: 23 32 dynes/cm = 0.023 0.032 N/m at 20°C 13.9 Liquid-Water Interfacial Tension:
	12. HAZARD CLASSIFICATIONS Code of Federal Regulations: Not listed NAS Hazard Rating for Bulk Water Transportation: Category Rating Fire	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 380 560°F = 193 293°C = 466 566°K  13.4 Freezing Point: -45 to -55° F = -43 to -48°C = 230 to 225°K  13.5 Critical Temperature: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.81 0.85 at 15°C (figuid)  13.8 Liquid Surface Tension: 23 32 dynes/cm = 0.023 0.032 N/m at 20°C
	12. HAZARD CLASSIFICATIONS Code of Federal Regulations: Not listed NAS Hazard Rating for Bulk Water Transportation: Category Rating Fire 2 Health Vapor Irritant 1 Liquid or Solid Irritant 1	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 380 560°F = 193 293°C = 466 566°K  13.4 Freezing Point: -45 to -55°F = -43 to -48°C = 230 to 225°K  13.5 Critical Temperature: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.81 0.85 at 15°C (figure) 13.8 Liquid Surface Tension: 23 32 dynes/em = 0.023 0.032 N/m at 20°C  13.9 Liquid-Water Interfacial Tension: 47 49 dynes/em = 0.047 0.049 N/m
	12. HAZARD CLASSIFICATIONS Code of Federal Regulations: Not listed NAS Hazard Rating for Bulk Water Transportation: Category Rating Fire 2 Health Vapor Irritant 1 Liquid or Solid Irritant 1 Poisons 1 Water Pollution	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 380 560°F = 193 293°C = 466 566°K  13.4 Freezing Point: -45 to -55° F = -43 to -48°C = 230 to 225° K 13.5 Critical Temperature: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.81 0.85 at 15°C (fiquid) 13.8 Liquid Surface Tension: 23 32 dynes/cm = 0.023 0.032 N/m at 20°C 13.9 Liquid-Water Interfacial Tension: 47 49 dynes/cm = 0.047 0.049 N/m at 20°C 13.10 Vapor (Gas) Specific Gravity: Not pertinent
	12. HAZARD CLASSIFICATIONS Code of Federal Regulations: Not listed NAS Hazard Rating for Bulk Water Transportation: Category Rating Fire 2 Health Vapor Irritant 1 Liquid or Solid Irritant 1 Poisons 1 Water Pollution Human Toxicity 1	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 380 560°F = 193 293°C = 466 566°K  13.4 Freezing Point: -45 to -55°F = -43 to -48°C = 230 to 225°K  13.5 Critical Temperature: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.81 0.85 at 15°C (figurd)  13.8 Liquid Surface Tension: 23 32 dynes/em = 0.023 0.032 N/m at 20°C  13.9 Liquid-Water Interfacial Tension: 47 49 dynes/em = 0.047 0.049 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent 13.11 Ratio of Specific Heats of Vapor (Gas):
	12. HAZARD CLASSIFICATIONS Code of Federal Regulations: Not listed NAS Hazard Rating for Bulk Water Transportation: Category Rating Fire 2 Health Vapor Irritant 1 Liquid or Solid Irritant 1 Poisons 1 Water Pollution Human Toxicity 1	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 380 560°F = 193 293°C = 466 566°K  13.4 Freezing Point: -45 to -55° F = -43 to -48°C = 230 to 225° K 13.5 Critical Temperature: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.81 0.85 at 15°C (fiquid) 13.8 Liquid Surface Tension: 23 32 dynes/cm = 0.023 0.032 N/m at 20°C 13.9 Liquid-Water Interfacial Tension: 47 49 dynes/cm = 0.047 0.049 N/m at 20°C 13.10 Vapor (Gas) Specific Gravity: Not pertinent
	12. HAZARD CLASSIFICATIONS Code of Federal Regulations: Not listed NAS Hazard Rating for Bulk Water Transportation: Category Rating Fire 2 Health Vapor Irritant 1 Liquid or Solid Irritant 1 Poisons 1 Water Pollution Human Toxicity 1 Aquatic Toxicity 1 Actinetic Effect 3 Reactivity	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 380 560°F = 193 293°C = 466 566°K  13.4 Freezing Point: -45 to -55°F = -43 to -48°C = 230 to 225°K  13.5 Critical Temperature: Not pertinent 13.6 Critical Temperature: Not pertinent 13.7 Specific Gravity: 0.81 0.85 at 15°C (figurd)  13.8 Liquid Surface Tension: 23 32 dynes/cm = 0.023 0.032 N/m at 20°C  13.9 Liquid-Water Interfacial Tension: 47 49 dynes/cm = 0.047 0.049 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent 13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent
	(See Hazard Assessment Handbook, CG 448-3) A-T-U  12. HAZARD CLASSIFICATIONS Code of Federal Regulations: Not listed NAS Hazard Rating for Bulk Water Transportation: Category Rating Fire 2 Health Vapor Irritant 1 Liquid or Solid Irritant 1 Poisons 1 Water Pollution Human Toxicity 1 Aquatic Toxicity 1 Aesthetic Effect 3 Reactivity Other Chemicals 0	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 380 560°F = 193 293°C = 466 566°K  13.4 Freezing Point: −45 to −55°F = −43 to −48°C = 230 to 225°K  13.5 Critical Temperature: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.81 0.85 at 15°C (fiquid) 13.8 Liquid Surface Tension: 23 32 dynes/cm = 0.023 0.032 N/m at 20°C 13.9 Liquid-Water Interfacial Tension: 47 49 dynes/cm = 0.047 0.049 N/m at 20°C 13.10 Vapor (Gas) Specific Gravity: Not pertinent 13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent 13.12 Latent Heat of Vaporization: 110 But/lb = 60 cal.g = 2.5 × 10° J kg 13.13 Heat of Combustion: −18,540 But/lb
	12. HAZARD CLASSIFICATIONS  Code of Federal Regulations: Not listed  NAS Hazard Rating for Bulk Water Transportation:  Category Rating Fire 2 Health Vapor Irritant 1 Liquid or Solid Irritant 1 Poisons 1 Water Pollution Human Toxicity 1 Aquatic Toxicity 1 Acquatic Toxicity 1 Acquatic Effect 3 Reactivity Other Chemicals 0 Water 0 Self-Reaction 0	13.1 Physical State at 15°C and 1 atm: Liquid  13.2 Molecular Weight: Not pertunent  13.3 Boiling Point at 1 atm: 380 560°F = 193 293°C 466 566°K  13.4 Freezing Point: -45 to -55° F = -43 to -48°C = 230 to 225° K  13.5 Critical Temperature: Not pertunent  13.6 Critical Pressure: Not pertunent  13.7 Specific Gravity: 0.81 0.85 at 15°C (figure)  13.8 Liquid Surface Tension: 23 32 dynes/cm = 0.023 0.032 N/m at 20°C  13.9 Liquid-Water Interfacial Tension: 47 49 dynes/cm = 0.047 0.049 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertunent  13.11 Ratio of Specific Heats of Vapor (Gas): Not pertunent  13.12 Latent Heat of Vaporization: 110 Btu/lb = 00 call/g = 2.5 × 10° J/kg  13.13 Heat of Combustion: -118,400 Btu/lb = -10,300 call/g = -431.24 × 10° J/kg
	12. HAZARD CLASSIFICATIONS Code of Federal Regulations: Not listed  NAS Hazard Rating for Bulk Water Transportation: Category Rating Fire 2 Health Vapor Irritant 1 Liquid or Solid Irritant 1 Poisons 1 Water Pollution Human Toxicity 1 Aquatic Toxicity 1 Aquatic Toxicity 1 Asthetic Effect 3 Reactivity Other Chemicals 0 Water 0 Self-Reaction 0 NFPA Hazard Classifications:	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 380 560°F = 193 293°C 446 566°K  13.4 Freezing Point: -45 to -55° F = -43 to -48°C = 230 to 225° K  13.5 Critical Pressure: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.81 0.85 at 15°C (fiquid) 13.8 Liquid Surface Tension: 23 32 dynes/cm = 0.023 0.032 N/m at 20°C  13.9 Liquid-Water Interfacial Tension: 47 49 dynes/cm = 0.047 0.049 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent 13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent 13.12 Latent Heat of Vaporization: 110 Btu/b = 60 cat/g = 2.5 × 10° J kg 13.13 Heat of Combustion: -18.540 Btu/b = -10.000 cat/g = -431.24 × 10° J/kg 13.14 Heat of Decomposition: Not pertinent
12.2	(See Hazard Assessment Handbook, CG 446-3) A-T-U  12. HAZARD CLASSIFICATIONS Code of Federal Regulations: Not listed  NAS Hazard Rating for Bulk Water Transportation: Category Rating Fire 2 Health Vapor Irritant 1 Liquid or Solid Irritant 1 Poisons 1 Water Pollution Human Toxicity 1 Aquatic Toxicity 1 Aesthetic Effect 3 Reactivity Other Chemicals 0 Water 0 Self-Reaction 0  NFPA Hazard Classifications: Category Classifications	13.1 Physical State at 15°C and 1 atm: Liquid  13.2 Molecular Weight: Not pertunent  13.3 Boiling Point at 1 atm: 380 560°F = 193 293°C 466 566°K  13.4 Freezing Point: -45 to -55° F = -43 to -48°C = 230 to 225° K  13.5 Critical Temperature: Not pertunent  13.6 Critical Pressure: Not pertunent  13.7 Specific Gravity: 0.81 0.85 at 15°C (figure)  13.8 Liquid Surface Tension: 23 32 dynes/cm = 0.023 0.032 N/m at 20°C  13.9 Liquid-Water Interfacial Tension: 47 49 dynes/cm = 0.047 0.049 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertunent  13.11 Ratio of Specific Heats of Vapor (Gas): Not pertunent  13.12 Latent Heat of Vaporization: 110 Btu/lb = 00 call/g = 2.5 × 10° J/kg  13.13 Heat of Combustion: -118,400 Btu/lb = -10,300 call/g = -431.24 × 10° J/kg
12.2	12. HAZARD CLASSIFICATIONS Code of Federal Regulations: Not listed NAS Hazard Rating for Bulk Water Transportation: Category Rating Fire 2 Health Vapor Irritant 1 Liquid or Solid Irritant 1 Poisons 1 Water Pollution Human Toxicity 1 Aquatic Toxicity 1 Acsthetic Effect 3 Reactivity Other Chemicals 0 Water 0 Self-Reaction 0 NFPA Hazard Classifications: Category Classification Health Hazard (Blue) 0	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 380 560°F = 193 293°C 466 566°K  13.4 Freezing Point: -45 to -55° F = -43 to -48°C = 230 to 225° K  13.5 Critical Temperature: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.81 0.85 at 15°C (fiquid) 13.8 Liquid Surface Tension: 23 32 dynes/cm = 0.023 0.032 N/m at 20°C  13.9 Liquid-Water Interfacial Tension: 47 49 dynes/cm = 0.047 0.049 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent 13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent 13.12 Latent Heat of Vaporization: 110 Btu/lb = 60 cal/g = 2.5 × 10° J kg 13.13 Heat of Combustion: -18.540 Btu/lb = -10.300 cal/g = -431.24 × 10° J/kg 13.14 Heat of Decomposition: Not pertinent 13.15 Heat of Solution: Not pertinent
12.2	(See Hazard Assessment Handbook, CG 446-3) A-T-U  12. HAZARD CLASSIFICATIONS Code of Federal Regulations: Not listed  NAS Hazard Rating for Bulk Water Transportation: Category Rating Fire 2 Health Vapor Irritant 1 Liquid or Solid Irritant 1 Poisons 1 Water Pollution Human Toxicity 1 Aquatic Toxicity 1 Aesthetic Effect 3 Reactivity Other Chemicals 0 Water 0 Self-Reaction 0  NFPA Hazard Classifications: Category Classifications	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 380 560°F = 193 293°C 466 566°K  13.4 Freezing Point: -45 to -55° F = -43 to -48°C = 230 to 225° K  13.5 Critical Temperature: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.81 0.85 at 15°C (fiquid) 13.8 Liquid Surface Tension: 23 32 dynes/cm = 0.023 0.032 N/m at 20°C  13.9 Liquid-Water Interfacial Tension: 47 49 dynes/cm = 0.047 0.049 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent 13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent 13.12 Latent Heat of Vaporization: 110 Btu/lb = 60 cal/g = 2.5 × 10° J kg 13.13 Heat of Combustion: -18.540 Btu/lb = -10.300 cal/g = -431.24 × 10° J/kg 13.14 Heat of Decomposition: Not pertinent 13.15 Heat of Solution: Not pertinent
12.2	12. HAZARD CLASSIFICATIONS Code of Federal Regulations: Not listed NAS Hazard Rating for Bulk Water Transportation: Category Rating Fire 2 Health Vapor Irritant 1 Liquid or Solid Irritant 1 Poisons 1 Water Pollution Human Toxicity 1 Aquatic Toxicity 1 Aquatic Toxicity 1 Acenthetic Effect 3 Reactivity Other Chemicals 0 Water 0 Self-Reaction 0 NFPA Hazard Classifications: Category Classification Health Hazard (Blue) 0 Flammability (Red) 2	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 380 560°F = 193 293°C 466 566°K  13.4 Freezing Point: -45 to -55° F = -43 to -48°C = 230 to 225° K  13.5 Critical Temperature: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.81 0.85 at 15°C (fiquid) 13.8 Liquid Surface Tension: 23 32 dynes/cm = 0.023 0.032 N/m at 20°C  13.9 Liquid-Water Interfacial Tension: 47 49 dynes/cm = 0.047 0.049 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent 13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent 13.12 Latent Heat of Vaporization: 110 Btu/lb = 60 cal/g = 2.5 × 10° J kg 13.13 Heat of Combustion: -18.540 Btu/lb = -10.300 cal/g = -431.24 × 10° J/kg 13.14 Heat of Decomposition: Not pertinent 13.15 Heat of Solution: Not pertinent
12.2	12. HAZARD CLASSIFICATIONS Code of Federal Regulations: Not listed NAS Hazard Rating for Bulk Water Transportation: Category Rating Fire 2 Health Vapor Irritant 1 Liquid or Solid Irritant 1 Poisons 1 Water Pollution Human Toxicity 1 Aquatic Toxicity 1 Aquatic Toxicity 1 Acenthetic Effect 3 Reactivity Other Chemicals 0 Water 0 Self-Reaction 0 NFPA Hazard Classifications: Category Classification Health Hazard (Blue) 0 Flammability (Red) 2	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 380 560°F = 193 293°C 466 566°K  13.4 Freezing Point: -45 to -55° F = -43 to -48°C = 230 to 225° K  13.5 Critical Tenserature: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.81 -0.85 at 15°C (fiquid) 13.8 Liquid Surface Tension: 23 -32 dynes/em = 0.023 -0.032 N/m at 20°C 13.9 Liquid-Water Interfacial Tension: -47 -49 dynes/em = 0.047 -0.049 N/m -at 20°C 13.10 Vapor (Gas) Specific Gravity: Not pertinent 13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent 13.12 Latent Heat of Vaporization: -10.80 to 24 de 2.5 × 10° J kg 13.13 Heat of Combustion: -18.540 But/lb = -10.300 cal. g = -43.1.24 × 10° J kg 13.14 Heat of Decomposition: Not pertinent 13.15 Heat of Solution: Not pertinent 13.16 Heat of Polymerization: Not pertinent
12.2	12. HAZARD CLASSIFICATIONS  Code of Federal Regulations: Not listed  NAS Hazard Rating for Bulk Water Transportation:  Category Rating Fire 2 Health  Vapor Irritant 1 Liquid or Solid Irritant 1 Poisons 1 Water Pollution Human Toxicity 1 Aquatic Toxicity 1 Aquatic Toxicity 1 Activity Other Chemicals 0 Water 0 Self-Reaction 0 NFPA Hazard Classifications: Category Classification Health Hazard (Blue) 0 Flammability (Red) 2 Reactivity (Yellow) 0	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 380 560°F = 193 293°C 466 566°K  13.4 Freezing Point: -45 to -55° F = -43 to -48°C = 230 to 225° K  13.5 Critical Tenserature: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.81 -0.85 at 15°C (fiquid) 13.8 Liquid Surface Tension: 23 -32 dynes/em = 0.023 -0.032 N/m at 20°C 13.9 Liquid-Water Interfacial Tension: -47 -49 dynes/em = 0.047 -0.049 N/m -at 20°C 13.10 Vapor (Gas) Specific Gravity: Not pertinent 13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent 13.12 Latent Heat of Vaporization: -10.80 to 24 de 2.5 × 10° J kg 13.13 Heat of Combustion: -18.540 But/lb = -10.300 cal. g = -43.1.24 × 10° J kg 13.14 Heat of Decomposition: Not pertinent 13.15 Heat of Solution: Not pertinent 13.16 Heat of Polymerization: Not pertinent

### OILS, FUEL: 1-D

		:					
	Call fire departs: Avoid contact w Isolate and remo Notify local heal	Ploats on water.  Floats on water.  6.3 Fire Extinguishing Agents Dry chemica foam, or carbon dioxide foam water may be ineffective.  6.4 Fire Extinguishing Agents Not to be Use Water may be ineffective.  6.5 Special Hezzards of Combustion Product Not pertinent.  6.6 Behavior in Fire: Not pertinent.  6.7 Ignition Temperature: 350-625°F		Flash Point: 100°F C.C. Flammable Limits in Air: 1.3%—6% Fire Extinguishing Agents: Dry chemical, foam, or carbon dioxide Fire Extinguishing Agents Not to be Used: Water may be ineffective. Special Mazards of Combustion Products: Not pertinent Behavier in Fire: Not pertinent Ignition Temperature: 350-625°F	8. WATER POLLUTION  8.1 Aquatio Toxicity: 204 mg/1/24 hr/juvenile American shad/ TL <sub>m</sub> /salt water  8.2 Waterfowt Toxicity: 20 mg/kg LD <sub>29</sub> (mailard)  8.3 Biological Oxygen Demand (BOD): Data not available  8.4 Food Chain Concentration Potential: None		
	Fire	CALL FOR MEDICAL AID.  LIQUID  Livitating to skin and eyes.  Harmful if swallowed. Remove contaminated clothing and shoes. Flush affected areas with plenty of water.  IF IN EYES, hold evelids open and flush with plenty of water.  IF SWALLOWED and victim is CONSCIOUS, have victim drink water or mulk.  DO NOT INDUCE VOMITING.				9. SELECTED MANUFACTURERS  1. Atlantic Richfield Co. 717 Fifth Ave. New York, N. Y. 10022  2. Shell Oil Co. 1 Shell Plaza	
Exį	I B B F U			7.2	Caustics: Not pertinent Polymerization: Not pertinent	Houston, Tex. 77001  3. Sun Oil Co. St. Davids, Pa. 19087	
	llution	Dangerous to aquatic life in high concentrations. Fouling to shoreline. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water undes.				10.1 Grades or Purity: Diesel fuel I-D (ASTM) 10.2 Storage Temperature: Ambient 10.3 Inert Atmosphere: No requirement 10.4 Venting: Open (flame arrester)	
(See Re Mecl Shou	RESPONSE TO RESPONSE HARDON HA	ndbook, CG 446-4) nent	2. LABELS  No hazard label required by Code of Federal Regulations	<b>-</b>    -	11. HAZARD ASSESSMENT CODE (See Hazard Assessment Handbook, CG 448-3) A-T-U	13. PHYSICAL AND CHEMICAL PROPERTIES  13.1 Physical State at 15°C and 1 atm: Liquid  13.2 Molecular Weight: Not pertinent  13.3 Boiling Point 1 atm:  380-560°F = 193-293°C = 466-566°K  13.4 Freezing Point:  -30°F = -34°C = 240°K	
3.1 Synony 3.2 Coast ( 3.3 Chemic 3.4 IMCO/	CHEMICAL DES yms: Diesel oil. I Guard Compati Petroleum ical Formula: N (United Nations lation: 3.1/1270	light ibility Classification: oil sot applicable i Numerical	4. OBSERVABLE CHARACTERISTICS 4.1 Physical State (as shipped): Liquid 4.2 Color: Light brown 4.3 Odor: Characteristic	12.2	12. HAZARD CLASSIFICATIONS Code of Federal Regulations: Not listed NAS Hazard Rating for Bulk Water Transportation: Not listed NFPA Hazard Classifications: Category Classification Health Hazard (Blue) 0 Flammability (Red) 2 Reactivity (Yellow) 0	13.5 Critical Temperature: Not pertunent 13.6 Critical Pressure: Not pertunent 13.7 Specific Gravity: 0.81-0.85 at 15°C (liquid) 13.8 Liquid Surface Tension: 23-32 dynes/cm = 0.023-0.032 N/m at 20°C 13.9 Liquid-Water Interfacial Tension: 47-49 dynes/cm = 0.047-0.049 N/m at 20°C 13.10 Vapor (Gas) Specific Gravity: Not pertunent 13.11 Ratio of Specific Heats of Vapor (Gas): Not pertunent 13.12 Latent Heat of Vaporization:	
5.2 Sympto INC rang to e caus deve of c 5.3 Treatm	oms Following I GESTION causes ging from mild he exhalation of solve ses severe lung in eloping pulmonal tentral nervous sy nent for Exposu	Exposure: INHALATI s nausea, vomiting, and creadache to anesthesia, corent; signs of kidney and li ritation with coughing, ga ry edema; later, signs of b extern excitement followed we: INGESTION: do No	oves; goggles or face shield.  ON causes headache and slight giddiness. ramping: depression of central nervous system ma, and death; pulmonary irritation secondary ver damage may be delayed. ASPIRATION tagging, dyspnea, substernal distress, and rapidly oronchopneumonia and pneumonius; acute onset			110 Btu/lb = 60 cal/g = 2.5 × 10° J/kg  13.13 Heat of Combustion: -18.540 Btu/lb = -10.300 cal/g = -431.24 × 10° J/kg  13.14 Heat of Decomposition: Not pertunent  13.15 Heat of Solution: Not pertunent  13.16 Heat of Polymerization: Not pertunent	
5.4 Toxicit 5.5 Short- 5.6 Toxicit 5.7 Late To 5.8 Vapor high 5.9 Liquid tor	er. SKIN: removity by Inhalation Term Inhalation ty by Ingestion: Oxicity: Data no (Gas) Irritant C In Concentrations. I or Solid Irritani	ve solvent by wiping and w (Threshold Limit Value n Limits: Data not avails Grade 1: LDo 5-15 g/kg ot available characteristics: Slight st. The effect is temporary, t Characteristics: Mini- me smarting and reddening	vash with soup and water.  P: No single value applicable.  the state of the state o		NG	(Continued on pages 3 and 6)	

5.10 Odor Threshold: Data not available

### OILS, FUEL: 2

Call fire dep Avoid conta Isolate and r	Offy Equid  Floats on water,	Yellow-brown Lube or fact oil odor	6.2° 6.3° 6.4° 6.5°	6. FIRE HAZARDS  Flack Points: 136 F.C.C. Flammanine Limits in Air: Data not available Fire Extinguishing Agents. Dry chemical, foam, or carbon dioxide: Fire Extinguishing Agents Not to be Used:  Water may be ineffective  Special Hazards of Combustion Products:  Not pertinent:  Behavior in Fire: Not pertinent	8. WATER POLLUTION  8.1 Aquatic Toxicity: 200 ppm/24 hr/juvenile American shad/TLm/ fresh water 20 ppm/96 hr/rainbow trout eggs/TLm/ salt water  8.2 Weterfowl Toxicity: Data not available  8.3 Biological Oxygen Demand (BOD): Data not available: None  8.4 Food Chain Concentration Potential: None	
Fire	Combostible.  Extinguish with dry chemical, foam or carbon dioxide.  Water may be ineffective on fire.  Cool exposed containers with water.		6.7 6.8 6.9	Ignition Temperature: 494°F Electrical Mazard: Not pertinent Burning Rate: 4 mm/min.	9. SELECTED MANUFACTURERS  1. Atlantic Richfield Co. 717 Fifth Ave. New York, N. Y. 10022  2. Shell Oil Co. 1 Shell Plaza	
Exposure	CALL FOR MEDICAL AID.  LIQUID  Irritating to akin and eyes. If swallowed, wild cause nauses, vomiting. Remove contammated clothing and shoes. Flush affected areas with plenty of water. IF IN EYES, hold evelids open and flush with plenty of water. IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk.  DO NOT INDUCE VOMITING.  Exposure			7. CHEMICAL REACTIVITY Reactivity with Water: No reaction Reactivity with Common Materials: No reaction Stability During Transport: Stable Neutratizing Agents for Acids and Caustion: Not pertunent Polymerization: Not pertunent Inhibiter of Polymerization: Not pertinent	Houston, Tex. 77001  3. Sun Oil Co. St. Davids, Pa. 19087  10. SHIPPING INFORMATION  10.1 Grades or Purity: Commercial  10.2 Storage Temperature: Ambient	
Water Pollution	May be dangerous if it enters water intakes.				10.3 Inert Atmosphere: No requirement 10.4 Venting: Open (flame arrester)	
(See Response Metho Mechanical con Should be remo		LABELS  No hazard label required by Code of Federal Regulations		11. HAZARD ASSESSMENT CODE (See Mazzard Assessment Handbook, CQ 446-3) A-T-U	13. PHYSICAL AND CHEMICAL PROPERTIES 13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Bolling Point at 1 atm: 540-640°F = 282-338°C = 555-611°K 13.4 Freezing Point:	
3.1 Synonyms: Hom 3.2 Coast Guard Cor	npetibility Classification: oleum oil la: Not applicable tions Numerical	4. OBSERVABLE CHARACTERISTICS 4.1 Physical State (as shipped): Liquid 4.2 Color: Light brown 4.3 Odor: Like kerosine; characteristic	12.	12. HAZARD CLASSIFICATIONS  1 Code of Federal Regulations: Not listed  2 NAS Hazard Rating for Bulk Water Transportations: Category Classifications: Category Classification Health Hazard (Blue) 0 Flammability (Red) 2 Reactivity (Yellow) 0	-20°E = -29°C = 244°K  13.5 Critical Temperature: Not pertinent  13.6 Critical Pressure: Not pertinent  13.7 Specific Gravity: 0.87-0.90 at 20°C (liquid)  13.8 Liquid Surface Tenelon: (est.) 25 dynes/cm = 0.025 N/m at 20°C  13.9 Liquid-Water Interfacial Tenelon: (est.) 50 dynes/cm = 0.05 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent  13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent	
5.2 Symptoms Follor INGESTION. ranging from n to exhalation o causes severe li developing pulu of central nerve 5.3 Trestment for Ex	ive Equipment: Protective g wing Exposure: INHALAT causes nausea, vomiting, and of hid headache to anesthesia, co i solvent; signs of kidney and I ung irritation with coughing, g monary edema; later, signs off pus system excitement followe posure: INGESTION: do N	ION causes headache and slight giddiness. rramping: depression of central nervous system ma, and death; pulmonary irritation secondary iver damage may be delayed. ASPIRATION agging, dyspnea, substernal distress, and rapidly oronchopneumonia and pneumonitis; acute onset d by depression.  OT induce vomiting. ASPIRATION: enforce bed			13.12 Latent Heat of Vaporization: Not pertinent  13.13 Heat of Combustion: -19.440 Btu/lb = -10.800 cal/g = -452.17 × 10 <sup>5</sup> J/kg  13.14 Heat of Decomposition: Not pertinent  13.15 Heat of Solution: Not pertinent  13.16 Heat of Polymerization: Not pertinent	
SKIN: remove 5.4 Toxicity by Inhali	solvent by wiping and wash w stion (Threshold Limit Value	): No single value applicable.			(Continued on pages 5 and 6)	
5.6 Toxicity by Inges 5.7 Late Toxicity: D. 5.8 Vapor (Gas) Irrit. high concentra 5.9 Liquid or Solid in	ant Characteristics: Slight strong. The effect is temporary.	marting of eyes or respiratory system if present in imum hazard. If spilled on clothing and allowed		N	OTES	

# OILS, FUEL: 2-D

Call fire depr Avoid contact	Dicarl ed. medium Oily liquid Yellow-brown Lube or fuel oil odor Floats on water.  Stop discharge if possible. Call fire department. Avoid contact with liquid. Isolate and remove discharged material.			6. FIRE HAZARDS  Flash Point: +125° F.C.C.  Flammable Limits in Air: +1.3%—6.0%  Fire Extinguishing Agents: Dry chemical, foam, or carbon dioxide  Fire Extinguishing Agents Not to be Used: — Water may be ineffective  Special Mazards of Combustion Products: —	8. WATER POLLUTION 8.1 Aquatic Toxicity: 204 mg/1/24 fr/juvenile American shad/ TL <sub>m</sub> /salt water 8.2 Waterfowt Texicity: Data not available 8.3 Blookgied Oxygen Dermand (BOD): Data not available 8.4 Food Chain Concentration Potential:	
	health and pollution control ago	mcies.··	6.6 6.7 6.8	Not pertinent:  Behavior in First: Not pertinent  Ignition Temperature: 490-545° F  Electrical Mazard: Not pertinent	None	
Combustible. Extinguish with dry chemical, foam, carbon dioxide. Extinguish with dry chemical, foam, carbon dioxide. Water may be ineffective on fire. Cool exposed containers with water.			6.9	6.9 Burning Rate: 4 mm/min.	9. SELECTED MANUFACTURERS  1. Atlantic Richfield Co. 717 Fifth Ave. New York, N. Y. 10022  2. Shell Oil Co. 1 Shell Plaza Houston, Tex. 77001	
Exposure	CALL FOR MEDICAL AID.  LQUID  Irritating to skin and eyes.  Harmful if swallowed.  Remove contaminated cloth  Flush affected areas with ple  IF IN EYES, hold eyelids op  IF SWALLOWED, and victin  or milk.  DO NOT INDUCE VOMITIN	ine and shoes. nty of water. en and flush with plenty of water, n is CONSCIOUS, have victim drink water	7.2 7.3 7.4 7.5	7. CHEMICAL REACTIVITY Reactivity with Water: No reaction Reactivity with Common Materiale: No reaction Stability During Transport: Stable Neutralizing Agents for Acids and Caustics: Not pertinent Polymerization: Not pertinent Inhibitor of Polymerization: Not pertinent	3. Sun Oil Co. St. Davids, Pa. 19087  10. SHIPPING INFORMATION 10.1 Grades or Purity: Diesel fuel 2-D	
Water Pollution	Dangerous to aquatic life in h Fouling to shoreline. May be dangerous if it enters Notify local health and wildl Notify operators of nearby w	water intakes. ife officials.			(ASTM): 10.2 Storage Temperature: Ambient 10.3 Inert Atmosphere: No requirement 10.4 Venting: Open (flame arrester)	
	ved	2. LABELS  No hazard label required by  Code of Federal Regulations		11. HAZARD ASSESSMENT CODE (See Hazard Assessment Handbook, CG 448-3) A-T-U  12. HAZARD CLASSIFICATIONS	13. PHYSICAL AND CHEMICAL PROPERTIES     13.1 Physical State at 15°C and 1 atm: Liquid     13.2 Molecular Weight: Not pertunent     13.3 Boiling Point at 1 atm:	
3.1 Synonyms: Diese 3.2 Coast Guard Con	npatibility Classification: leum oil a: Not applicable tions Numerical	4. OBSERVABLE CHARACTERISTICS 4.1 Physical State (as shipped): Liquid 4.2 Color: Light brown 4.3 Odor: Characteristic: like kerosene	12.2	Code of Federal Regulations: Not listed  NAS Hazard Rating for Bulk Water  Transportation: Not listed  NFPA Hazard Classifications: Category Classification  Health Hazard (Blue) 0  Flammability (Red) 2  Reactivity (Yellow) 0	13.6 Critical Pressure: Not pertinent  13.7 Specific Gravity: 0.87-0.90 at 20°C (liquid)  13.8 Liquid Surface Tension:     (est.) 25 dynes/cm = 0.025 N/m at 20°C  13.9 Liquid-Water Interfacial Tension:     (est.) 50 dynes/cm = 0.05 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity:     Not pertinent  13.11 Ratio of Specific Heats of Vapor (Gas):     Not pertinent  13.12 Latent Heat of Vaporization:	
5.2 Symptoms Follow of central nervo pulmonary irrithe delayed. AS substernal distrand pneumonit 5.3 Treatment for Exhausternal SKIN: remove	ve Equipment: Protective gliping Exposure: INGESTIO us visitem ranging from mild hation secondary to exhalation PIRATION causes severe tun ess, and rapidly developing puist acute onset of central nervo posure: INGESTION: do Nister oxygen; seek medical attustivent by wiping and wash wisholders.	N causes nausea, vomiting, and cramping: depression neadache to anesthesia, coma, and death: of solvent: signs of kidney and liver damage may girritation with coughing, gagging, dyspnea. Ilmonary edema: later, signs of bronchopneumonia us system excitement followed by depression.  OT induce vomiting. ASPIRATION: enforce ention. EYES: wash with copious quantity of water. th soap and water.			Not pertinent  13.13 Heat of Combustion: -19.440 Btu/lb = -10.800 cal/g = -452.17 × 10 <sup>9</sup> J/kg  13.14 Heat of Decomposition: Not pertinent  13.15 Heat of Solution: Not pertinent  13.16 Heat of Polymerization: Not pertinent	
5.5 Short-Term Inha 5.6 Toxicity by Inges 5.7 Late Toxicity: Di 5.8 Vapor (Gas) Irriti high concentra 5.9 Liquid or Solid Ir	istion Limits: Data not availition: Grade 1: LD <sub>®</sub> 5-15 g/kg ata not available and Characteristics: Slight strong, The effect is temporary.	t  marting of eyes or respiratory system if present in  imum hazard. If spilled on clothing and allowed		NI .	(Continued on pages 5 and 61	
5.10 Odor Threshold:	Data not available		1 (			

Commun Symony Resident funt eil No. 4	Oily liquid Floats on water.	Dark Lube er fæd eil odor			
Call fire dep Avoid conta Isolate and r	ge if possible.  Intracent.  It with liquid.  Enove discharged material.  health and pollution control ages	ncies.			
Fire	Combustible.  Extinguish with dry chemical, foam or carbon dioxide.  Water may be ineffective on fire.  Cool exposed containers with water.				
Exposure	CALL FOR MEDICAL AID.  LIQUID  Lristing to skin and eyes.  Harmful if wallowed.  Remove contaminated clothing and shoes.  Flush affected areas with plenty of water.  IF IN EYES, hold evelids open and Ilush with plenty of water.  IF SWALLOWED and victum is CONSCIOUS, have victum drink water or milk.  DO NOT INDUCE VOMITING.				
Water Pollution	Effect of low concentrations of Fouling to shoreline. May be dangerous if it enters Notify local health and wildlift Notify operators of nearby was	water intakes. e officials.			
(See Response Me Mechanical co Should be rem		2. LABELS  No hazard label required by Code of Federal Regulations			
3.1 Synonyms: Re 3.2 Coast Guard C Pet 3.3 Chemical Form	AL DESIGNATIONS sidual fuel oil, No. 4 ompatibility Classification: croleum oil Mala: Not applicable lations Numerical .3/1223	4. OBSERVABLE CHARACTERISTICS 4.1 Physical State (as shipped): Liquid 4.2 Color: Brown 4.3 Odor: Characteristic; like kerosene			
5.2 Symptoms Foli pulmonary in exposure. 5.3 Treatment for treatment pr by serial che- wash with co	ctive Equipment: Protective iowing Exposure: INGESTIC ritation is normally minimal but in the Exposure: INGESTION: do I obably not required; delayed dest x-rays; consider prophylactic	ON: gastrointestinal irritation. ASPIRATION: at may become more severe several hours after NOT lavage or induce vomiting. ASPIRATION: velopment of pulmonary irritation can be detected antibiotic regime if condition warrants. EYES: wipe off and wash with soap and water.			
5.5 Short-Term ini 5.6 Toxicity by ing 5.7 Late Toxicity: 5.8 Vapor (Gas) in 5.9 Liquid or Sol to remain, m	nalation Limits: Not pertinent estion: Grade I: LD <sub>10</sub> 5 to 15 g Data not available ritant Characteristics: None	g/kg Minimum hazard. If spilled on clothing and allowed			

	C FIRE MATARRA	e WATER BOLLUTION
	6. FIRE HAZARDS	8. WATER POLLUTION
8.1	Flash Point: >130°F C.C.	8.1 Aquatic Toxicity: Data not available:
5.2	Floremetric Limits in Air: 1.0%—5%	8.2 Waterfewi Texicity: Data not available
8.3	Fire Extinguishing Agents: Dry chemical,	8.3 Biological Oxygen Demand (BOD):
	foam, or carbon dioxide	Data not available
8.4	Fire Extinguishing Agents Not to be Used:	8.4 Food Chain Concentration Potential:
	Water may be ineffective.	None
8.5	Special Hazards of Combustion Products:	
	Not pertinent	
8.6		
6.7	Ignition Temperature: 505°F	
6.8	Electrical Hazard: Not pertinent	
6.9	Burning Rate: 4 mm/min.	
		9. SELECTED MANUFACTURERS
		Atlantic Richfield Co.
		717 Fifth Ave.
		New York, N. Y. 10022
		2. Shell Oil Co.
		Shell Plaza
		Houston, Tex. 77001
	7. CHEMICAL REACTIVITY	3. Sun Oil Co.
		St. Davids, Pa. 19087
7.1	Reactivity with Water: No reaction	
7.2	Reactivity with Common Materials:	
	No reaction	
7.3	Stability During Transport: Stable	
7.4	Neutralizing Agents for Acids and	
	Caustics: Not pertinent	
7.5	Polymerization: Not pertinent	
7.6	Inhibitor of Polymerization: Not pertinent	10. SHIPPING INFORMATION
	•	
		10.1 Grades or Purity: Commercial
		10.2 Storage Temperature: Ambient
		10.3 Inert Atmosphere: No requirement
		10.4 Venting: Open (flame arrester)
	11 HAZADO ASSESSMENT CODE	13 PHYSICAL AND CHEMICAL PROPERTIES
5000	11. HAZARD ASSESSMENT CODE	13. PHYSICAL AND CHEMICAL PROPERTIES
	(See Hazard Assessment Handbook, CG 446-3)	13.1 Physical State at 15°C and 1 atm: Liquid
		13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent
	(See Hazard Assessment Handbook, CG 446-3)	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 214 to >1092°F
	(See Hazard Assessment Handbook, CG 446-3)	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 214 to >1092°F = 101 to >588° C = 374 to 861° K
	(See Hezzird Assessment Handbook, CG 446-3) A-T-U	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 214 to >1092°F =101 to >588° C = 374 to 861° K 13.4 Freezing Point=20 to +15°F
	(See Hazard Assessment Handbook, CG 446-3)	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 214 to >1092°F = 101 to >588° C = 374 to 861° K  13.4 Freezing Point: −20 to +15°F = −29 to −9°C = 244 to 264° K
2.1	(See Hazard Assessment Handbook, CG 446-3) A-T-U  12. HAZARD CLASSIFICATIONS Code of Federal Regulations:	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 214 to >1092°F = 101 to >588°C = 374 to 861° K  13.4 Freezing Point:−20 to +15°F = −29 to −9°C = 244 to 264° K  13.5 Critical Temperature: Not pertinent
2.1	(See Hazard Assessment Handbook, CG 446-3) A-T-U  12. HAZARD CLASSIFICATIONS	13.1 Physical State at 15°C and 1 atm: Liquid     13.2 Molecular Weight: Not pertinent     13.3 Boiling Point at 1 atm: 214 to >1092°F
2.1	(See Hazard Assessment Handbook, CG 446-3) A-T-U  12. HAZARD CLASSIFICATIONS Code of Federal Regulations: Not listed NAS Hazard Rating for Bulk Water	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 214 to >1092°F = 101 to >588°C = 374 to 861° K  13.4 Freezing Point: −20 to +15°F = −29 to −9°C = 244 to 264° K  13.5 Critical Temperature: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity:
2. <b>2</b>	12. HAZARD CLASSIFICATIONS Code of Federal Regulations: Not listed NAS Hazard Rating for Bulk Water Transportation: Not listed	13.1 Physical State at 15°C and 1 atm: Liquid     13.2 Molecular Weight: Not pertinent     13.3 Boiling Point at 1 atm: 214 to >1092°F
2. <b>2</b>	(See Hazard Assessment Handbook, CG 446-3) A-T-U  12. HAZARD CLASSIFICATIONS Code of Federal Regulations: Not listed NAS Hazard Rating for Bulk Water	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 214 to >1092°F = 101 to >588° C = 374 to 861° K  13.4 Freezing Point: −20 to +15° F = −29 to −9°C = 244 to 264° K  13.5 Critical Pressure: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.90 (approx.) at 20°C (liquid)  13.8 Liquid Surface Tension:
2. <b>2</b>	12. HAZARD CLASSIFICATIONS Code of Federal Regulations: Not listed NAS Hazard Rating for Bulk Water Transportation: Not listed	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 214 to >1092°F = 101 to >588° C = 374 to 861° K  13.4 Freezing Point: −20 to +15°F = −29 to −9°C = 244 to 264° K  13.5 Critical Temperature: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.90 (approx.) at 20°C (liquid) 13.8 Liquid Surface Tension: (est.) 25 dynes/cm = 0.025 N/m at 20°C
2. <b>2</b>	12. HAZARD CLASSIFICATIONS Code of Federal Regulations: Not listed NAS Hazard Rating for Bulk Water Transportation: Not listed NFPA Hazard Classifications: Category Classification	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 214 to >1092°F = 101 to >588°C = 374 to 861° K  13.4 Freezing Point:—20 to +15°F = −29 to −9°C = 244 to 264° K  13.5 Critical Temperature: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.90 (approx.) at 20°C (liquid) 13.8 Liquid Surface Tension: (st.) 25 dynes/cm = 0.025 N/m at 20°C 13.9 Liquid-Water interfacial Tension:
2. <b>2</b>	12. HAZARD CLASSIFICATIONS Code of Federal Regulations: Not listed NAS Hazard Rating for Bulk Water Transportation: Not listed NFPA Hazard Classifications: Category Classification	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 214 to >1092°F = 101 to >588° C = 374 to 861° K  13.4 Freezing Point=20 to +15°F = −29 to −9°C = 244 to 264° K  13.5 Critical Temperature: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.90 (approx.) at 20°C (liquid) 13.8 Liquid Surface Tension: (est.) 25 dynes/cm = 0.025 N/m at 20°C  13.9 Liquid-Water Interfacial Tension: (est.) 50 dynes/cm = 0.05 N/m at 20°C
2. <b>2</b>	12. HAZARD CLASSIFICATIONS Code of Federal Regulations: Not listed NAS Hazard Rating for Bulk Water Transportation: Not listed NFPA Hazard Classifications: Category Classification Health Hazard (Blue) 0	13.1 Physical State at 15°C and 1 atm: Liquid  13.2 Molecular Weight: Not pertinent  13.3 Boiling Point at 1 atm: 214 to >1092°F = 101 to >588° C = 374 to 861° K  13.4 Freezing Point: −20 to +15°F = −29 to −9°C = 244 to 264° K  13.5 Critical Temperature: Not pertinent  13.6 Critical Pressure: Not pertinent  13.7 Specific Gravity: 0.90 (approx.) at 20°C (liquid)  13.8 Liquid Surface Tension: (est.) 25 dynes/cm = 0.025 N/m at 20°C  13.9 Liquid-Water Interfacial Tension: (est.) 50 dynes/cm = 0.05 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity:
2. <b>2</b>	12. HAZARD CLASSIFICATIONS  Code of Federal Regulations: Not listed NFPA Hazard Rating for Bulk Water Transportation: Not listed NFPA Hazard Classifications: Category Classification Health Hazard (Blue) 0 Flammability (Red)	13.1 Physical State at 15°C and 1 atm: Liquid  13.2 Molecular Weight: Not pertinent  13.3 Boiling Point at 1 atm: 214 to >1092°F = 101 to >588°C = 374 to 861° K  13.4 Freezing Point=−20 to +15°F = −29 to −9°C = 244 to 264° K  13.5 Critical Temperature: Not pertinent  13.6 Critical Pressure: Not pertinent  13.7 Specific Gravity: 0.90 (approx.) at 20°C (liquid)  13.8 Liquid Surface Tension: (est.) 25 dynes/cm = 0.025 N/m at 20°C  13.9 Liquid-Water Interfacial Tension: (est.) 50 dynes/cm = 0.05 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent
2. <b>2</b>	12. HAZARD CLASSIFICATIONS  Code of Federal Regulations: Not listed NFPA Hazard Rating for Bulk Water Transportation: Not listed NFPA Hazard Classifications: Category Classification Health Hazard (Blue) 0 Flammability (Red)	13.1 Physical State at 15°C and 1 atm: Liquid  13.2 Molecular Weight: Not pertinent  13.3 Boiling Point at 1 atm: 214 to >1092°F = 101 to >588° C = 374 to 861° K  13.4 Freezing Point: −20 to +15°F = −29 to −9°C = 244 to 264° K  13.5 Critical Temperature: Not pertinent  13.6 Critical Pressure: Not pertinent  13.7 Specific Gravity: 0.90 (approx.) at 20°C (liquid)  13.8 Liquid Surface Tension: (est.) 25 dynes/cm = 0.025 N/m at 20°C  13.9 Liquid-Water Interfacial Tension: (est.) 50 dynes/cm = 0.05 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity:
2. <b>2</b>	12. HAZARD CLASSIFICATIONS  Code of Federal Regulations: Not listed NFPA Hazard Rating for Bulk Water Transportation: Not listed NFPA Hazard Classifications: Category Classification Health Hazard (Blue) 0 Flammability (Red)	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 214 to >1092°F = 101 to >588° C = 374 to 861° K  13.4 Freezing Point—20 to +15°F = -29 to -9°C = 244 to 264° K  13.5 Critical Tenseure: Not pertinent 13.6 Critical Preseure: Not pertinent 13.7 Specific Gravity: 0.90 (approx.) at 20°C (liquid) 13.8 Liquid Surface Tension: (est.) 25 dynes/cm = 0.025 N/m at 20°C 13.9 Liquid-Water Interfacial Tension: (est.) 50 dynes/cm = 0.05 N/m at 20°C 13.10 Vapor (Gas) Specific Gravity: Not pertinent 13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent
2. <b>2</b>	12. HAZARD CLASSIFICATIONS  Code of Federal Regulations: Not listed NFPA Hazard Rating for Bulk Water Transportation: Not listed NFPA Hazard Classifications: Category Classification Health Hazard (Blue) 0 Flammability (Red)	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 214 to >1092°F = 101 to >588°C = 374 to 861° K  13.4 Freezing Point:—20 to +15°F = −29 to −9°C = 244 to 264° K  13.5 Critical Tenseure: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.90 (approx.) at 20°C (liquid) 13.8 Liquid Surface Tension: (est.) 25 dynes/cm = 0.025 N/m at 20°C 13.9 Liquid-Water interfacial Tension: (est.) 50 dynes/cm = 0.05 N/m at 20°C 13.10 Vapor (Gas) Specific Gravity: Not pertinent 13.11 Ratio of Specific Heats of Vapor (Gas):
2. <b>2</b>	12. HAZARD CLASSIFICATIONS  Code of Federal Regulations: Not listed NFPA Hazard Rating for Bulk Water Transportation: Not listed NFPA Hazard Classifications: Category Classification Health Hazard (Blue) 0 Flammability (Red)	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 214 to >1092°F = 101 to >588° C = 374 to 861° K  13.4 Freezing Point: −20 to +15°F = −29 to −9°C = 244 to 264° K  13.5 Critical Temperature: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.90 (approx.) at 20°C (liquid) 13.8 Liquid Surface Tension: (est.) 25 dynes/cm = 0.025 N/m at 20°C  13.9 Liquid-Water Interfacial Tension: (est.) 50 dynes/cm = 0.05 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent 13.11 Ratio of Specific Heets of Vapor (Gas): Not pertinent 13.12 Latent Heet of Vaporization:
2. <b>2</b>	12. HAZARD CLASSIFICATIONS  Code of Federal Regulations: Not listed NFPA Hazard Rating for Bulk Water Transportation: Not listed NFPA Hazard Classifications: Category Classification Health Hazard (Blue) 0 Flammability (Red)	13.1 Physical State at 15°C and 1 atm: Liquid  13.2 Molecular Weight: Not pertinent  13.3 Boiling Point at 1 atm: 214 to >1092°F = 101 to >588°C = 374 to 861° K  13.4 Freezing Point=20 to +15°F = −29 to −9°C = 244 to 264° K  13.5 Critical Temperature: Not pertunent  13.6 Critical Pressure: Not pertunent  13.7 Specific Gravity: 0.90 (approx.) at 20°C (liquid)  13.8 Liquid Surface Tension: (est.) 25 dyncs/cm = 0.025 N/m at 20°C  13.9 Liquid-Water Interfacial Tension: (est.) 50 dyncs/cm = 0.05 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertunent  13.11 Ratio of Specific Heats of Vapor (Gas): Not pertunent  13.12 Latent Heat of Vaporization: Not pertunent
2. <b>2</b>	12. HAZARD CLASSIFICATIONS  Code of Federal Regulations: Not listed NFPA Hazard Rating for Bulk Water Transportation: Not listed NFPA Hazard Classifications: Category Classification Health Hazard (Blue) 0 Flammability (Red)	13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 214 to >1092°F =101 to >588° C = 374 to 861° K  13.4 Freezing Point:—20 to +15°F = −29 to −9°C = 244 to 264° K  13.5 Critical Tensure: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.90 (approx.) at 20°C (liquid) 13.8 Liquid Surface Tension: (est.) 25 dynes/cm = 0.025 N/m at 20°C 13.9 Liquid-Water interfacial Tension: (est.) 50 dynes/cm = 0.05 N/m at 20°C 13.10 Vapor (Gas) Specific Gravity: Not pertinent 13.11 Ratio of Specific Heets of Vapor (Gas): Not pertinent 13.12 Latent Heet of Vaporization: Not pertinent 13.13 Heet of Combustion: −17.460 Btu/lb
2. <b>2</b>	12. HAZARD CLASSIFICATIONS  Code of Federal Regulations: Not listed NFPA Hazard Rating for Bulk Water Transportation: Not listed NFPA Hazard Classifications: Category Classification Health Hazard (Blue) 0 Flammability (Red)	13.1 Physical State at 15°C and 1 atm: Liquid  13.2 Molecular Weight: Not pertinent  13.3 Boiling Point at 1 atm: 214 to >1092°F = 101 to >588° C = 374 to 861° K  13.4 Freezing Point:—20 to +15°F = −29 to −9°C = 244 to 264° K  13.5 Critical Temperature: Not pertinent  13.6 Critical Pressure: Not pertinent  13.7 Specific Gravity: 0.90 (approx.) at 20°C (liquid)  13.8 Liquid Surface Tension: (est.) 25 dynes/cm = 0.025 N/m at 20°C  13.9 Liquid-Water Interfacial Tension: (est.) 50 dynes/cm = 0.05 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent  13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent  13.12 Latent Heat of Vaporization: Not pertinent  13.13 Heat of Combustion: −17,460 Btu/lb = −9,700 cat/g = −406.1 × 10° J/kg
2. <b>2</b>	12. HAZARD CLASSIFICATIONS  Code of Federal Regulations: Not listed NFPA Hazard Rating for Bulk Water Transportation: Not listed NFPA Hazard Classifications: Category Classification Health Hazard (Blue) 0 Flammability (Red)	13.1 Physical State at 15°C and 1 atm: Liquid  13.2 Molecular Weight: Not pertinent  13.3 Boiling Point at 1 atm: 214 to >1092°F = 101 to >588° C = 374 to 861° K  13.4 Freezing Point=20 to +15°F = -29 to -9°C = 244 to 264° K  13.5 Critical Temperature: Not pertinent  13.6 Critical Temperature: Not pertinent  13.7 Specific Gravity: 0.90 (approx.) at 20°C (liquid)  13.8 Liquid Surface Tension: (est.) 25 dyncs/cm = 0.025 N/m at 20°C  13.9 Liquid-Water Interfacial Tension: (est.) 50 dyncs/cm = 0.05 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent  13.11 Ratto of Specific Heats of Vapor (Gas): Not pertinent  13.13 Heat of Combustion: −17.460 Btu/lb = -9,700 cat/g = −406.1 × 10°J/kg  13.14 Heat of Decomposition: Not pertinent  13.15 Heat of Solution: Not pertinent
2. <b>2</b>	12. HAZARD CLASSIFICATIONS  Code of Federal Regulations: Not listed NFPA Hazard Rating for Bulk Water Transportation: Not listed NFPA Hazard Classifications: Category Classification Health Hazard (Blue) 0 Flammability (Red)	13.1 Physical State at 15°C and 1 atm: Liquid  13.2 Molecular Weight: Not pertinent  13.3 Boiling Point at 1 atm: 214 to >1092°F = 101 to >588° C = 374 to 861° K  13.4 Freezing Point:—20 to +15°F = −29 to −9°C = 244 to 264° K  13.5 Critical Temperature: Not pertinent  13.6 Critical Temperature: Not pertinent  13.7 Specific Gravity: 0.90 (approx.) at 20°C (liquid)  13.8 Liquid-Water Interfacial Tension: (est.) 25 dynes/cm = 0.05 N/m at 20°C  13.9 Liquid-Water Interfacial Tension: (est.) 50 dynes/cm = 0.05 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent  13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent  13.12 Latent Heat of Vaporization: Not pertinent  13.13 Heat of Combustion: −17,460 Btu/lb = −9,700 cal/g = −406.1 × 10° J/kg  13.14 Heat of Decomposition: Not pertinent
2. <b>2</b>	12. HAZARD CLASSIFICATIONS  Code of Federal Regulations: Not listed NFPA Hazard Rating for Bulk Water Transportation: Not listed NFPA Hazard Classifications: Category Classification Health Hazard (Blue) 0 Flammability (Red)	13.1 Physical State at 15°C and 1 atm: Liquid  13.2 Molecular Weight: Not pertinent  13.3 Boiling Point at 1 atm: 214 to >1092°F = 101 to >588° C = 374 to 861° K  13.4 Freezing Point=20 to +15°F = -29 to -9°C = 244 to 264° K  13.5 Critical Temperature: Not pertinent  13.6 Critical Temperature: Not pertinent  13.7 Specific Gravity: 0.90 (approx.) at 20°C (liquid)  13.8 Liquid Surface Tension: (est.) 25 dyncs/cm = 0.025 N/m at 20°C  13.9 Liquid-Water Interfacial Tension: (est.) 50 dyncs/cm = 0.05 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent  13.11 Ratto of Specific Heats of Vapor (Gas): Not pertinent  13.13 Heat of Combustion: −17.460 Btu/lb = -9,700 cat/g = −406.1 × 10°J/kg  13.14 Heat of Decomposition: Not pertinent  13.15 Heat of Solution: Not pertinent
2. <b>2</b>	12. HAZARD CLASSIFICATIONS  Code of Federal Regulations: Not listed NFPA Hazard Rating for Bulk Water Transportation: Not listed NFPA Hazard Classifications: Category Classification Health Hazard (Blue) 0 Flammability (Red)	13.1 Physical State at 15°C and 1 atm: Liquid  13.2 Molecular Weight: Not pertinent  13.3 Boiling Point at 1 atm: 214 to >1092°F = 101 to >588° C = 374 to 861° K  13.4 Freezing Point=20 to +15°F = -29 to -9°C = 244 to 264° K  13.5 Critical Temperature: Not pertinent  13.6 Critical Temperature: Not pertinent  13.7 Specific Gravity: 0.90 (approx.) at 20°C (liquid)  13.8 Liquid Surface Tension: (est.) 25 dyncs/cm = 0.025 N/m at 20°C  13.9 Liquid-Water Interfacial Tension: (est.) 50 dyncs/cm = 0.05 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent  13.11 Ratto of Specific Heats of Vapor (Gas): Not pertinent  13.13 Heat of Combustion: −17.460 Btu/lb = -9,700 cat/g = −406.1 × 10°J/kg  13.14 Heat of Decomposition: Not pertinent  13.15 Heat of Solution: Not pertinent
2. <b>2</b>	12. HAZARD CLASSIFICATIONS  Code of Federal Regulations: Not listed NFPA Hazard Rating for Bulk Water Transportation: Not listed NFPA Hazard Classifications: Category Classification Health Hazard (Blue) 0 Flammability (Red)	13.1 Physical State at 15°C and 1 atm: Liquid  13.2 Molecular Weight: Not pertinent  13.3 Boiling Point at 1 atm: 214 to >1092°F = 101 to >588° C = 374 to 861° K  13.4 Freezing Point=20 to +15°F = -29 to -9°C = 244 to 264° K  13.5 Critical Temperature: Not pertinent  13.6 Critical Temperature: Not pertinent  13.7 Specific Gravity: 0.90 (approx.) at 20°C (liquid)  13.8 Liquid Surface Tension: (est.) 25 dyncs/cm = 0.025 N/m at 20°C  13.9 Liquid-Water Interfacial Tension: (est.) 50 dyncs/cm = 0.05 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent  13.11 Ratto of Specific Heats of Vapor (Gas): Not pertinent  13.13 Heat of Combustion: −17.460 Btu/lb = -9,700 cat/g = −406.1 × 10°J/kg  13.14 Heat of Decomposition: Not pertinent  13.15 Heat of Solution: Not pertinent
2. <b>2</b>	12. HAZARD CLASSIFICATIONS  Code of Federal Regulations: Not listed NFPA Hazard Rating for Bulk Water Transportation: Not listed NFPA Hazard Classifications: Category Classification Health Hazard (Blue) 0 Flammability (Red)	13.1 Physical State at 15°C and 1 atm: Liquid  13.2 Molecular Weight: Not pertinent  13.3 Boiling Point at 1 atm: 214 to >1092°F = 101 to >588° C = 374 to 861° K  13.4 Freezing Point=20 to +15°F = -29 to -9°C = 244 to 264° K  13.5 Critical Temperature: Not pertinent  13.6 Critical Temperature: Not pertinent  13.7 Specific Gravity: 0.90 (approx.) at 20°C (liquid)  13.8 Liquid Surface Tension: (est.) 25 dyncs/cm = 0.025 N/m at 20°C  13.9 Liquid-Water Interfacial Tension: (est.) 50 dyncs/cm = 0.05 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent  13.11 Ratto of Specific Heats of Vapor (Gas): Not pertinent  13.13 Heat of Combustion: −17.460 Btu/lb = -9,700 cat/g = −406.1 × 10°J/kg  13.14 Heat of Decomposition: Not pertinent  13.15 Heat of Solution: Not pertinent
2. <b>2</b>	12. HAZARD CLASSIFICATIONS  Code of Federal Regulations: Not listed NFPA Hazard Rating for Bulk Water Transportation: Not listed NFPA Hazard Classifications: Category Classification Health Hazard (Blue) 0 Flammability (Red)	13.1 Physical State at 15°C and 1 atm: Liquid  13.2 Molecular Weight: Not pertinent  13.3 Boiling Point at 1 atm: 214 to >1092°F = 101 to >588° C = 374 to 861° K  13.4 Freezing Point=20 to +15°F = -29 to -9°C = 244 to 264° K  13.5 Critical Temperature: Not pertinent  13.6 Critical Temperature: Not pertinent  13.7 Specific Gravity: 0.90 (approx.) at 20°C (liquid)  13.8 Liquid Surface Tension: (est.) 25 dyncs/cm = 0.025 N/m at 20°C  13.9 Liquid-Water Interfacial Tension: (est.) 50 dyncs/cm = 0.05 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent  13.11 Ratto of Specific Heats of Vapor (Gas): Not pertinent  13.13 Heat of Combustion: −17.460 Btu/lb = -9,700 cat/g = −406.1 × 10°J/kg  13.14 Heat of Decomposition: Not pertinent  13.15 Heat of Solution: Not pertinent
2. <b>2</b>	12. HAZARD CLASSIFICATIONS  Code of Federal Regulations: Not listed NFPA Hazard Rating for Bulk Water Transportation: Not listed NFPA Hazard Classifications: Category Classification Health Hazard (Blue) 0 Flammability (Red)	13.1 Physical State at 15°C and 1 atm: Liquid  13.2 Molecular Weight: Not pertinent  13.3 Boiling Point at 1 atm: 214 to >1092°F = 101 to >588°C = 374 to 861° K  13.4 Freezing Point=-20 to +15°F = -29 to -9°C = 244 to 264° K  13.5 Critical Temperature: Not pertinent  13.6 Critical Temperature: Not pertinent  13.7 Specific Gravity: 0.90 (approx.) at 20°C (liquid)  13.8 Liquid-Water Interfacial Tension: (est.) 25 dynes/cm = 0.05 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent  13.11 Ratio of Specific Heets of Vapor (Gas): Not pertinent  13.12 Latent Heet of Vaporization: Not pertinent  13.13 Heet of Combustion: -17.460 Btu/lb = -9.700 cal/g = -406.1 × 10°J/kg  13.14 Heat of Decomposition: Not pertinent  13.15 Heat of Solution: Not pertinent  13.16 Heet of Polymerization: Not pertinent
2. <b>2</b>	12. HAZARD CLASSIFICATIONS  Code of Federal Regulations: Not listed  NAS Hazard Rating for Bulk Water Transportations: Not listed  NFPA Hazard Classifications: Category Classification Health Hazard (Blue)	13.1 Physical State at 15°C and 1 atm: Liquid  13.2 Molecular Weight: Not pertinent  13.3 Boiling Point at 1 atm: 214 to >1092°F = 101 to >588°C = 374 to 861° K  13.4 Freezing Point=-20 to +15°F = -29 to -9°C = 244 to 264° K  13.5 Critical Temperature: Not pertinent  13.6 Critical Temperature: Not pertinent  13.7 Specific Gravity: 0.90 (approx.) at 20°C (liquid)  13.8 Liquid-Water Interfacial Tension: (est.) 25 dynes/cm = 0.05 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent  13.11 Ratio of Specific Heets of Vapor (Gas): Not pertinent  13.12 Latent Heet of Vaporization: Not pertinent  13.13 Heet of Combustion: -17.460 Btu/lb = -9.700 cal/g = -406.1 × 10°J/kg  13.14 Heat of Decomposition: Not pertinent  13.15 Heat of Solution: Not pertinent  13.16 Heet of Polymerization: Not pertinent

#### OILS, FUEL: 5

Common Synon Resident field oil No. 5	Ofly Required  Usually-Seats on wa	Dark Strong labe oil odor =-	6.2 6.3	6. FIRE HAZARDS: Flash Point: > 130°F C.C. Flammable Limits in Air: 1%—5% Fire Extinguishing Agenta: Dry chemical, (oam, or carbon dioxide Fire Extinguishing Agents Not to be Used:
Call fire depo Avoid conta- Isolate and r	ge if possible. artment. ct with liquid. emove discharged material. health and pollution control agen	cies.	6.5 6.6 6.7	Water may be ineffective.  Speede Hazarde of Combustion Products: Not pertinent:  Behavior in Fire: Not pertinent  Ignitions Temperature: Data not available
Fire	Combustible. Extinguish with dry chemical. foam or carbon dioxide. Water may be ineffective on fire. Cool exposed containers with water.			Electrical Hazard: Not pertinent Burning Rate: 4 mm/min.
Exposure	CALL FOR MEDICAL AID. LIQUID Irritating to skin and eyes. Hamful if swallowed. Remove contaminated clothin Flush affected areas with plen IF IN EYES, hold evelids oper IF SWALLOWED and victim is or milk. DO NOT INDUCE VOMITING	or of water. Land flush with plenty of water. CONSCIOUS, have victim drink water	7.2 7.3 7.4	7. CHEMICAL REACTIVITY Reactivity with Water: No reaction Reactivity with Common Materials: No reaction Stability During Transport: Stable Neutralizing Agents for Acids and Caustics: Not pertinent Polymerization: Not pertinent Inhibitor of Polymerization: Not pertinent
(See Response Me Mechanical c Should be ren		rater intakes. officials.		11. HAZARD ASSESSMENT CODE (See HAZZI'A ASSESSMENT HANDDOOK, CG 446-3) A-T-U
3.1 Synonyms: Re 3.2 Coast Guard C Pe 3.3 Chemical Forn	AL DESIGNATIONS sidual fuel oil, No. 5 ompatibility Classification: troleum oil nula: Not applicable Nations Numerical .3/1223	4. OBSERVABLE CHARACTERISTICS 4.1 Physical State (as shipped): Liquid 4.2 Color: Brown 4.3 Odor: Characteristic; like kerosene	1 1	12. HAZARD CLASSIFICATIONS  Code of Federal Regulations: Not listed  NAS Hazard Rating for Bulk Water  Transportation: Not listed  NFPA Hazard Classifications: Category Classification  Health Hazard (Blue) 0 Flammability (Red) 2 Reactivity (Yellow) 0
5.2 Symptoms Following pulmonary exposure. 5.3 Treatment for I treatment proby serial check wash with co. 5.4 Toxicity by Inh. 5.5 Short-Term Ini.	ctive Equipment: Protective ( lowing Exposure: INGESTIC irritation is normally minima Exposure: INGESTION: do Nobably not required; delayed de at x-rays; consider prophylactic	ON: gastrointestinal irritation. ASPIRATION:  I but may become more severe several hours after  HOT lavage or induce vomiting. ASPIRATION:  velopment of pulmonary irritation can be detected  antibiotic regime if condition warrants. EYES:  wipe off and wash with soap and water.  1. Not pertinent	-	
<ul><li>5.7 Late Toxicity:</li><li>5.8 Vapor (Gas) Irr</li><li>5.9 Liquid or Solid</li></ul>	Data not available  itant Characteristics: None  Irritant Characteristics: Mir ay cause smarting and reddenin	nimum hazard. If spilled on clothing and allowed		

#### 8. WATER POLLUTION 8.1 Aquatic Toxicity: Data not available 8.2 Wateriowi Texicity: Data not available 8.3 Biological Oxygen Demand (BOD): Data not available 8.4 Food Chain Conce 9. SELECTED MANUFACTURERS Atlantic Richfield Co. 717 Fifth Ave. New York, N. Y. 10022 2. Shell Oil Co. I Shell Plaza Houston, Tex. 77001 3. Sun Oil Co. St. Davids, Pa. 19087 10. SHIPPING INFORMATION 10.1 Grades or Purity: Fuel oil No. 5 (heavy); Fuel oil No. 5 (light) 10.2 Storage Temperature: Ambient 10.3 Inert Atmosphere: No requirement 10.4 Venting: Open (flame arrester) 13. PHYSICAL AND CHEMICAL PROPERTIES 13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 426-> 1062°F = 218->570°C = 491->843°K 13.4 Freezing Point: 0°F = -18°C = 255°K 13.5 Critical Temperature: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.90 (approx.) at 20°C (liquid) 13.8 Liquid Surface Tension: (est.) 25 dynes/cm = 0.025 N/m at 20°C 13.9 Liquid-Water Interfacial Tension: (est.) 50 dynes/cm = 0.05 N/m at 20°C 13.10 Vapor (Gas) Specific Gravity: 13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent 13.12 Latent Heat of Vaporization: 13.13 Heat of Combustion: -18,000 Btu/lb= $-10,000 \text{ cal/g} = -418.68 \times 10^5 \text{ J/kg}$ 13.14 Heat of Decomposition: Not pertinent 13.15 Heat of Solution: Not pertinent 13.16 Heat of Polymerization: Not pertinent (Continued on pages 5 and 6)

NOTES

				D-15:-		
·	Common Bynam Busher C oil Residual final oil No. 6	Thick liquid  Usually floats o	Black Tar odor	6.2 6.3 6.4	6. FIRE HAZARDS  Flash Point: > 150° F C.C.  Flammable Limits in Air: 1%—5%  Fire Extinguishing Agente: Dry chemical, foam, or carbon dioxide.  Fire Extinguishing Agente Not to be Ueed: Water may be ineffective.	8. WATER POLLUTION 8.1 Aquatio Toxicity: 2400 ppm/48 hr/juvenile American shad/ TL <sub>m</sub> /fresh water 2417 mg/1/48 hr/juvenile American shad/ TL <sub>m</sub> /salt water 8.2 Waterloud Toxicity: Data not available 8.3 Biological Oxygen Demand (BOD):
	Colf fire department. Avoid contact with liquid. Lotate and remove discharged material. Notify local health and pollution control agencies.			6.6 6.7	6.5 Special Hazards of Combustion Products: Not pertinent 6.6 Behavior in Fire: Not pertinent 6.7 Ignition-Temperature: 765° F 6.8 Electrical Hazard: Not pertinent 6.9 Burning Rate: 4 mm/min.	Data not available  8.4 Food Chain Concentration Potential:  Data not available
	Combustible. Extinguish with dry chemical, foam or carbon dioxide. Water may be ineffective on fire. Cool exposed containers with water.		140	9. SELECTED MANUFACTURERS  1. Atlantic Richfield Co. 717 Fifth Ave. New York, N. Y. 10022  2. Shell Oil Co. 1 Shell Plaza Houston, Tex. 77001		
	Exposure		b.  Othine and shoes.  plenty of water.  open and flush with plenty of water.  tum is CONSCIOUS, have victum drink water	7.2 7.3 7.4 7.5	7. CHEMICAL REACTIVITY Reactivity with Water: No reaction Reactivity with Common Materials: No reaction Stability During Transport: Stable Neutralizing Agents for Acids and Caustics: Not pertinent Polymerization: Not pertinent Inhibitor of Polymerization: Not pertinent	10. SHIPPING INFORMATION 10.1 Grades or Purity: Commercial 10.2 Storage Temperature: Elevated 10.3 Inert Atmosphere: No requirement
	Water Pollution	Dangerous to aquatic life Fouling to shorekine. May be dangerous if it ent Notify local health and w Notify local health and w	ters water intakes.			10.4 Venting: Open (flame arrester)
	RESPONSE T     See Response Methods     Mechanical contain     Should be removed     Chemical and phys	Handbook, CG 448-4) nment	2. LABELS  No hazard label required by Code of Federal Regulations		11. HAZARD ASSESSMENT CODE (See Hazard Assessment Handbook, CG 446-3) A-T-U	13. PHYSICAL AND CHEMICAL PROPERTIES 13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: 415->> 1093°F = 212->> 588°C = 485->> 861°K  13.4 Freezing Point: 25 to 55°F
3.2		C oil il fuel oil No. 6 atibility Classification: um oil Not applicable ns Numerical	4. OBSERVABLE CHARACTERISTICS 4.1 Physical State (as shipped): Liquid 4.2 Color: Dark 4.3 Odor: Tarry; like kerosene	12.	12. HAZARD CLASSIFICATIONS  1 Code of Federal Regulations: Not listed  2 NAS Hazard Rating for Bulk Water Transportation: Not listed  3 NFPA Hazard Classifications: Category Classification Health Hazard (Blue)	= -4 to +13°C = 269 to 286°K  13.5 Critical Temperature: Not pertinent  13.6 Critical Fressure: Not pertinent  13.7 Specific Gravity: 0.95 (approx.) at 20°C (liquid)  13.8 Liquid Surface Tension: (est.) 25 dynes/cm = 0.025 N/m at 20°C  13.9 Liquid-Water Interfacial Tension: (est.) 50 dynes/cm = 0.05 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent  13.11 Ratio of Specific Heats of Vapor (Gas):
5.2 5.3 5.4 5.5 5.6	Symptoms Followin pulmonary irritat exposure.  Treatment for Expo treatment probab by serial chest xe- wash with expious  Toxicity by inhalatic Short-Term inhalat Toxicity by ingestion	Equipment: Protective gog Exposure: INGESTION: do No ly not required; delayed devays; consider prophylactic as quantity of water. SKIN: on (Threshold Limits: Not pertinent in: Grade I: LD <sub>9</sub> S to 15 g,	,			Not pertinent  13.12 Latent Heat of Vaporization: Not pertinent  13.13 Heat of Combustion: —18,000 Btu/lb = -10,000 cal/g = -418.68 × 10° J/kg  13.14 Heat of Decomposition: Not pertinent  13.15 Heat of Solution: Not pertinent  13.16 Heat of Polymerization: Not pertinent  .  (*Continued on pages 5 and 6.)
5.7 5.8 5.9 5.10	Liquid or Solid Irrit	t Characteristics: None ant Characteristics: Min ause smarting and reddening	imum hazard. If spilled on clothing and allowed g of the skin.			IOTES

#### OILS, MISCELLANEOUS: LUBRICATING

Call fire dep	Crankesse oil Oily liquid		6.2 6.3 6.4	6. FIRE HAZARDS 6.1 Flesh Points: 30° F-450° F C.C. 6.2 Flammable Limits in Air: Data not available 6.3 Fire Extinguishing Agents: Dry chemical. foam, or carbon dioxide 6.4 Fire Extinguishing Agents Not to be Used: Water of foam may cause frothing. 6.5 Special Mazards of Combustion Products:	8. WATER POLLUTION 8.1 Aquatic Toxicity: Data not available 8.2 Waterlow! Texticity: Data not available 8.3 Blological Oxygen Demand (BOD): Data not available 8.4 Food Chain Concentration Potential: None
Isolate and	remove discharged material. I health and pollution control ag	rencies.	6.6 6.7 6.8	•	
Combustible.  Extinguish with dry chemical, foam or carbon dioxide.  Water may be ineffective on fire.  Cool exposed containers with water.		6.9	6.9 Burning Rate: 4 mm/min.	9. SELECTED MANUFACTURERS  1. Shell Oil Co. 1 Shell Pluza Houston, Tex. 77001  2. Standard Oil Co. (Indiana) 910 S. Michigan Ave. Chicago, Ill. 60605	
Exposure	CALL FOR MEDICAL AID LIQUID Irritating to skin and eyes. Harmful if swallowed. Remove contaminated cloth Flush affected areas with ple IF IN EYES, hold evelids on IF SWALLOWED and victure or milk.	ing and shoes. enty of water. see and flush with plenty of water. is CONSCIOUS, have victum drink water	7.2 7.3 7.4 7.5	7. CHEMICAL REACTIVITY Reactivity with Water: No reaction Reactivity with Common Materials: No reaction Stability During Transport: Stable Neutralizing Agents for Acids and Caustics: Not pertinent Polymerization: Not pertinent	3. Sun Oil Co. St. Davids, Pa. 19087
			7.6	Inhibitor of Polymerization: Not pertinent	10. SHIPPING INFORMATION  10.1 Grades or Purity: Various viscosities  10.2 Storage Temperature: Ambient  10.3 Inert Atmosphere: No requirement  10.4 Venting: Open (flame arrester)
Water Pollution	Effect of low concentrations Fouling to shoreline. May be dangerous if it enters Notify local health and wildl Notify operators of nearby w	water intakes. life officials.			
. (See Response Metho Mechanical con Should be remo		2. LABELS  No hazard label required by Code of Federal Regulations		11. HAZARD ASSESSMENT CODE (See Hazard Assessment Handbook, CG 446-3) A-T-U	13. PHYSICAL AND CHEMICAL PROPERTIES 13.1 Physical State at 15°C and 1 atm: Liquid 13.2 Molecular Weight: Not pertinent 13.3 Boiling Point at 1 atm: Very high 13.4 Freezing Point: Not pertinent
3.1 Synonyms: Cran Moto Tran 3.2 Coast Guard Cor	or oil smission oil npatibility Classification: pleum oil la: Not applicable tions Numerical	4. OBSERVABLE CHARACTERISTICS 4.1 Physical State (as shipped): Liquid 4.2 Color: Yellow fluorescent 4.3 Odor: Characteristic	12. <b>2</b>	12. HAZARD CLASSIFICATIONS Code of Federal Regulations: Not listed  NAS Hazard Rating for Bulk Water Transportation: Not listed  NFPA Hazard Classifications: Category Classification  Health Hazard (Blue) 0  Flammability (Red) 1  Reactivity (Yellow) 0	13.5   Critical Temperature: Not pertunent     13.6   Critical Pressure: Not pertunent     13.7   Specific Gravity: 0.84-0.96 at 15°C (figured     13.8   Liquid Surface Tension: 36-37.5 dynes/cm   = 0.036-0.0375 N/cm at 20°C     13.9   Liquid-Water Interfacial Tension: 33-54 dynes/cm   = 0.033-0.054 N/m at 20°     13.10   Vapor (Gas) Specific Gravity: Not pertunent     13.11   Ratio of Specific Heats of Vapor (Gas): Not pertunent     13.12   Latent Heat of Vaporization:
5.2 Symptoms Follor frequency of be minimal but m 5.3 Treatment for Extreatment prob by verial chest with soap and v 5.4 Toxicity by Inhali	ive Equipment: Protective gi wing Exposure: INGESTIO owel passage may occur. ASPI as become more severe several posure: INGESTION: do N ably not required; delayed dev x-rays. EYES; wash with copic	N: minimal gastrointestinal tract irritation; increased RATION; pulmonary irritation is normally hours after exposure.  OT lavage or induce vomiting, ASPIRATION; elopment of pulmonary irritation can be detected use quantity of water, SKIN; wipe oil and wash			Not pertunent  13.13 Heat of Combustion: -18.486 Btu Ib = -10.270 cal g = -4.29 vs × 10°.1 kg  13.14 Heat of Decomposition: Not pertunent  13.15 Heat of Solution: Not pertunent  13.16 Heat of Polymerization: Not pertunent
5.7 Late Toxicity: Do 5.8 Vapor (Gas) Irritansystem if prese 5.9 Liquid or Solid Ir	ent Characteristics: Vapors nt in high concentrations. The ritant Characteristics: Mini cause smarting and reddening	cause a slight smarting of the eyes or respiratory effect is temporary.		NO	Continued on pages 3 and 6 -

#### OILS, MISCELLANEOUS: MOTOR

Common Synanyum Crasicase eil Lubricating eil Colly liquid Floats on water  Stop discharge if possible Call fire department. Avoid contact with liquid. Isolate and remove discharged material. Notify local health and pollution control agencies.  Combustible Extinguish with dry chemical. foam or carbon dioxide. Water may be ineffective on fire. Cool exposed containers with water.  Fire			6.2 6.3 6.4 6.5 6.8 6.7	6. FIRE HAZARDS  Flash Points 275-600° F C.C.  Floremobile Limits in Airs Data not available.  Fire Extinguishing Agents: Dry chemical, foam, or carbon dioxide.  Fire Extinguishing Agents Not be Useds: Water may be ineffective.  Special Hazards of Combustion Products: Not pertinent.  Behavior in Fire: Not pertinent.  Behavior in Fire: Not pertinent.	8. WATER POLLUTION 8.1 Aquatic Texicity: Data not available 8.2 Waterfoot Texicity: Data not available 9.3 Biological Oxygen Demand (BOD): Data not available 8.4 Food Chain Concentration Potential: None	
		6.8 Electrical Mazards - Not pertinent 6.9 Burning Rates: 4 mm/min.		9. SELECTED MANUFACTURERS  1. Shell Oil Co. 1 Shell Plaza Houston, Tex. 77001  2. Standard Oil Co. (Indiana) 910 S. Michigan Ave. Chicago, Ill. 60605		
Exposure		ty of water. n and flush with plenty of water. s CONSCIOUS, have victum drink water	7.2	Caustics: Not pertinent	3. Sun Oil Co. St. Davids, Pa. 19087	
		·	7.6	•	10. SHIPPING INFORMATION 10.1 Grades or Purity: Various viscosities 10.2 Storage Temperature: Ambient 10.3 Inert Atmosphere: No requirement 10.4 Venting: Open (flame arrester)	
Water Pollution	Effect of low concentrations of Fouling to shorekine. May be dangerous if it enters w Notify local health and wildlift Notify operators of nearby wa	rater intakes. e officials.				
(See Response Mee Mechanical con Should be reme		2. LABELS  No hazard label required by Code of Federal Regulations		11. HAZARD ASSESSMENT CODE (See Mazard Assessment Mandbook, CG 446-3) A-T-U	13. PHYSICAL AND CHEMICAL PROPERTIES  13.1 Physical State at 15°C and 1 atm: Liquid  13.2 Molecular Weight: Not pertunent  13.3 Boiling Point at 1 atm: Very high  13.4 Freezing Point  - 2.99°F = -34.4°C = 238.8°K	
Synonyms: Crar Lubi Trar 2 Coast Guard Co	ricating oil smission oil impetibility Classification: oleum oil ale: Not applicable stions Numerical	4. OBSERVABLE CHARACTERISTICS  4.1 Physical State (as shipped): Liquid  4.2 Color: Yellow fluorescent  4.3 Odor: Characteristic	12.	12. HAZARD CLASSIFICATIONS     Code of Federal Regulations:     Not listed     NAS Hazard Rating for Sulk Water     Transportation: Not listed     NFPA Hazard Classifications: Not listed	13.5 Critical Temperature: Not pertinent 13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.84-0.96 at 15°C (liquid) 13.8 Liquid Surface Tension: 36-37.5 dynes/cm = 0.036-0.0375 N/m at 20°C 13.9 Liquid-Water Interfacial-Tension: 33-54 dynes/cm = 0.033-0.054 N/m at 20°C 13.10 Vaper (Gas) Specific Gravity: Not pertinent 13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent 13.12 Latent Heat of Vaporization:	
Symptoms Follo frequency of be minimal but m Treatment for Ex treatment prot by serial chest with soap and	wing Exposure: Protective gli wing Exposure: INGESTIOI owel passage may occur. ASPII hay become more severe several sposure: INGESTION: do No bably not required; delayed deve x-rays. EYES: wash with copio water.	N: minimal gastrointestinal irritation; increased RATION: pulmonary irritation is normally hours after exposure.  OT lavage or induce vomiting. ASPIRATION: elopment of pulmonary irritation can be detected us amounts of water. SKIN: wipe off oil and wash	·		Not pertinent  13.13 Heat of Combustion: -18.486 Btu/lb = -10.270 cal/g = -429.98 × 10 J/kg  13.14 Heat of Decomposition: Not pertinent  13.15 Heat of Solution: Not pertinent  13.16 Heat of Polymerization: Not pertinent	
5 Short-Term inha 6 Toxicity by Inger 7 Late Toxicity: D 8 Vapor (Gas) Irrit system if prese 9 Liquid or Solid in	ant Characteristics: Vapors on the light concentrations. The content characteristics: Mining years among and reddening	ible kg cause a slight smarting of the eyes or respiratory effect is temporary. mum hazard. If spilled on clothing and allowed	_	N	(Continued on pages 5 and 6)	

		·				
Common Synon Kerossa Kerossa Fuel oil No. 1 JP-1	Watery liquid Floats on water.	Colorless Kerosene odor				
Call fire de Avoid cont Isolate and	arge if possible. partment. act with liquid. remove discharged material, il health and pollution control ag	sgencies.				
Fire	Combustible.  Extinguish with foam, dry chemical, or carbon dioxide.  Water may be ineffective on fire.  Cool exposed containers with water.					
CALL FOR MEDICAL AID. LIQUID Irritating to skin and eyes. Harmful if swallowed.  Remove contamunated clothing and shoes. Flush affected areas with plenty of water. IF IN EYES, hold eyelds open and flush with plenty of water. IF SWALLOWED and victum is CONSCIOUS, have victum drink water or mix. DO NOT INDUCE VOMITING.						
Water Pollution	Dangerous to aquatic life in h Fouling to shoreline. May be dangerous if it enters Notity local health and wild Notify operators of nearby	s water intakes. dlite officials.				
(See Response Meth Mechanical cor Should be remo		2. LABELS  No hazard label required by  Code of Federal Regulations				
3.1 Synonyme: No.  JP-I  Kero  Kero  Coast Guard Co  Petr	osene issine mpatibility Classification: oleum oil ila: Not applicable stions Numerical	4. OBSERVABLE CHARACTERISTICS 4.1 Physical State (as shipped): Liquid 4.2 Color: Colorless 4.3 Odor: Like kerosene				
	5. HEALTH	H HAZARDS				
5.2 Symptoms Folio stomach: if tal edema. 5.3 Treatment for ExINGESTION water. SKIN: 5.4 Toxicity by Inhal 5.5 Short-Term Inha	ten into lungs, causes coughing sposure: ASPIRATION: enfo do NOT induce vomiting; call wipe off and wash with soap an ation (Threshold Limit Value lation Limits: Data not avails	es slight irritation of eyes and nose. Liquid irritates g, distress, and rapidly developing pulmonary force bed rest; administer oxygen; call a doctor. Il a doctor. EYES; wash with copious amounts of nd water.  10 20 ppm lable				
5.6 Toxicity by Ingestion: Grade 1: LD <sub>0</sub> 5 to 15 g/kg  5.7 Late Toxicity: Data not available  5.8 Vapor (Gas) Irritant Characteristics: Vapors cause slight smarting of eyes and respiratory system if present in high concentrations. The effect is temporary.  5.9 Liquid or Solid Irritant Characteristics: Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of the skin.  5.10 Odor Threshold: 1 ppm						

6. FIRE HAZARDS 6.1 Flash Point: +100°F C.C. 6.2 Flammable Limits in Air: 0.7%—5% 6.3 Fire Extinguishing Agents: Foam, dry chemical, or carbon dioxide 6.4 Fire Extinguishing Agents Not to be Used: Water may be ineffective 6.5 Special Mazards of Combustion Products: Not pertinent 6.6 Behavior in Fire: Not pertinent 6.7 Ignition Temperature: 444°F	8. WATER POLLUTION 8.1 Aquatic Toxicity: 2990 ppm/24 hr/bluegiil/TLm/fresh water 8.2 Waterlow Toxicity: Data not available 8.3 Biological Oxygen Demand (BOD): 53%, 5 days 8.4 Food Chain Concentration Potential: None
6.9 Burning Rate: 4 mm/min.	9. SELECTED MANUFACTURERS 1. Shell Oil Co. 1 Shell Plaza Houston, Tex. 77001 2. Standard Oil Co. (Indiana) 910 S. Michigan Ave. Chicago, Ill. 60605 3. Sun Oil Co.
7. CHEMICAL REACTIVITY 7.1 Reactivity with Water: No reaction 7.2 Reactivity with Common Materials: No reaction 7.3 Stability During Transport: Stable 7.4 Neutralizing Agents for Acids and Caustica: Not pertunent 7.5 Polymerization: Not pertunent 7.6 Inhibitor of Polymerization: Not pertunent	St. Davids, Pa. 19087
	10. SHIPPING INFORMATION  10.1 Grades or Purity: Light hydrocarbon distillate: 100%  10.2 Storage Temperature: Ambient  10.3 Inert Atmosphere: No requirement  10.4 Venting: Open (flame arrester)
11. HAZARD ASSESSMENT CODE See HAZArd Assessment Handbook, CG 446-3) A-T-U	13. PHYSICAL AND CHEMICAL PROPERTIES  13.1 Physical State at 15°C and 1 atm: Liquid  13.2 Molecular Weight: Not pertinent  13.3 Boiling Point at 1 atm:  192-500°F = 200-260°C = 473-533°K
12. HAZARD CLASSIFICATIONS	13.4 Freezing Point: -48 to -55° F = -43 to -48°C = 230 to 225° K
12.1 Code of Federal Regulations:	13.5 Critical Temperature: Not pertinent
Not listed	13.6 Critical Pressure: Not pertinent
=	
Not listed 12.2 NAS Hazard Rating for Bulk Water	13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.8040 88 at 20°C (figure) 13.8 Liquid Surface Tension: 23-32 dynes/cm = 0.023-0.032 N/m at 20°C
Not listed  12.2 NAS Hazard Rating for Bulk Water Transportation: Category Rating Fire	13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.80-0.88 at 20°C (liquid) 13.8 Liquid Surface Tension: 23-32 dynes/cm = 0.023-0.032 N/m at 20°C 13.9 Liquid-Water Interfacial Tension:
Not listed  12.2 NAS Hezard Rating for Bulk Water Transportation: Category Rating Fire	13.6 Critical Pressure: Not pertinent 13.7 Specific Gravity: 0.80-0.88 at 20°C (liquid) 13.8 Liquid Surface Tension: 23-32 dynes/cm = 0.023-0.032 N/m at 20°C 13.9 Liquid-Water Interfacial Tension:
Not listed  12.2 NAS Hezard Rating for Bulk Water Transportation:  Category Rating Fire	13.6 Critical Pressure: Not pertinent     13.7 Specific Gravity: 0.80-0.88 at 20°C (liquid)     13.8 Liquid Surface Tension:     23-32 dynes/cm = 0.023-0.032 N/m at 20°C     13.9 Liquid-Water Interfacial Tension:     47-49 dynes/cm = 0.047-0.049 N/m at 20°C     13.10 Vapor (Gas) Specific Gravity:     Not pertinent     13.11 Ratio of Specific Heats of Vapor (Gas):
Not listed 12.2 NAS Hazard Rating for Bulk Water Transportation:  Category Rating Fire 2 Health Vapor Irritant     Liquid or Solid Irritant     Poisons     Water Pollution     Human Toxicity	13.6 Critical Pressure: Not pertinent  13.7 Specific Gravity: 0.8040 88 at 20°C (figured)  13.8 Liquid Surface Tension: 23-32 dynes/cm = 0.023-0.032 N/m at 20°C  13.9 Liquid-Water Interfacial Tension: 47-49 dynes/cm = 0.047-0.049 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent  13.11 Ratio of Specific Hests of Vapor (Gas): Not pertinent  13.12 Latent Heat of Vaporization:
Not listed   12.2   NAS Hezzard Rating for Bulk Water Transportation:   Category   Rating   Fire   2   Health   Vapor Irritant	13.6 Critical Pressure: Not pertinent  13.7 Specific Gravity: 0.80-0.88 at 20°C (hquid)  13.8 Liquid Surface Tension:  23-32 dynes/em = 0.023-0.032 N/m at 20°C  13.9 Liquid-Water Interfacial Tension:  47-49 dynes/em = 0.047-0.049 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent  13.11 Ratio of Specific Hests of Vapor (Gas): Not pertinent  13.12 Latent Heat of Vaporization: 10.8 Btu/lb = 60 cat/g = 2.51 × 10° J/kg  13.13 Hest of Combustion: −18.540 Btu/lb
Not listed   NAS Hazard Rating for Bulk Water Transportation:   Category   Rating	13.6 Critical Pressure: Not pertinent  13.7 Specific Gravity: 0.80-0.88 at 20°C (hquid)  13.8 Liquid Surface Tension:  23-32 dynes/em = 0.023-0.032 N/m at 20°C  13.9 Liquid-Water Interfacial Tension:  47-49 dynes/em = 0.047-0.049 N ⋅m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent  13.11 Ratio of Specific Hests of Vapor (Gas): Not pertinent  13.12 Latent Heat of Vaporization: 10.8 Btu/lb = 60 cat/g = 2.51 × 10° J/kg  13.13 Heat of Combustion: −18.540 Btu/lb  = 10.300 cat/g = −431 24 × 10° J/kg
Not listed	13.6 Critical Pressure: Not pertinent  13.7 Specific Gravity: 0.80-0.88 at 20°C (hquid)  13.8 Liquid Surface Tension: 23-32 dynes/em = 0.023-0.032 N/m at 20°C  13.9 Liquid-Water Interfacial Tension: 47-49 dynes/em = 0.047-0.049 N/m at 20°C  13.10 Vspor (Gas) Specific Gravity: Not pertinent  13.11 Ratio of Specific Hests of Vspor (Gas): Not pertinent  13.12 Latent Hest of Vsporization: 108 Buy/b = of cat g = 2.51 × 10° J/kg  13.13 Hest of Combustion: −18.540 Btu/b = −10.300 cat/g = −431 24 × 10° J/kg  13.14 Hest of Decomposition: Not pertinent
Not listed   NAS Hazard Rating for Bulk Water Transportation:   Category   Rating	13.6 Critical Pressure: Not pertinent  13.7 Specific Gravity: 0.80-0.88 at 20°C (hquid)  13.8 Liquid Surface Tension:  23-32 dynes/em = 0.023-0.032 N/m at 20°C  13.9 Liquid-Water Interfacial Tension:  47-49 dynes/em = 0.047-0.049 N ⋅m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent  13.11 Ratio of Specific Hests of Vapor (Gas): Not pertinent  13.12 Latent Heat of Vaporization: 10.8 Btu/lb = 60 cat/g = 2.51 × 10° J/kg  13.13 Heat of Combustion: −18.540 Btu/lb  = 10.300 cat/g = −431 24 × 10° J/kg
Not listed   NAS Hazard Rating for Bulk Water Transportation:   Category   Rating	13.6 Critical Pressure: Not pertinent  13.7 Specific Gravity: 0.80-0.88 at 20°C (fiquid)  13.8 Liquid Surface Tension:  23-32 dynes/cm = 0.023-0.032 N/m at 20°C  13.9 Liquid-Water Interfacial Tension:  47-49 dynes/cm = 0.047-0.049 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent  13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent  13.12 Latent Heat of Vaporization: 108 Btu/lb = 00 cat/g = 2.51 × 10° J/kg  13.13 Heat of Combustion: −18.540 Btu/lb = −10.300 cat/g = −431 24 × 10° J/kg  13.14 Heat of Decomposition: Not pertinent  13.15 Heat of Obecomposition: Not pertinent
Not listed   NAS Hazard Rating for Bulk Water Transportation:   Category   Rating	13.6 Critical Pressure: Not pertinent  13.7 Specific Gravity: 0.80-0.88 at 20°C (hquid)  13.8 Liquid Surface Tension: 23-32 dynes/em = 0.023-0.032 N/m at 20°C  13.9 Liquid-Water Interfacial Tension: 47-49 dynes/em = 0.047-0.049 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent  13.11 Ratio of Specific Hests of Vapor (Gas): Not pertinent  13.12 Latent Heat of Vaporization: 10.8 Btu/lb = 60 cat/g = 2.51 × 10° J/kg  13.13 Hest of Combustion: −18.540 Btu/lb = −10.300 cat/g = −431 24 × 10° J/kg  13.14 Hest of Decomposition: Not pertinent  13.15 Hest of Solution: Not pertinent
Not listed   NAS Hazard Rating for Bulk Water Transportation:   Category   Rating	13.6 Critical Pressure: Not pertinent  13.7 Specific Gravity: 0.80-0.85 at 20°C (liquid)  13.8 Liquid Surface Tension:  23-32 dynes/cm = 0.023-0.032 N/m at 20°C  13.9 Liquid-Water Interfacial Tension:  47-49 dynes/cm = 0.047-0.049 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent  13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent  13.12 Latent Heat of Vaporization: 108 Btu/lb = 00 cat/g = 2.51 × 10° J/kg  13.13 Heat of Combustion: −18.540 Btu/lb = −10.300 cat/g = −431 24 × 10° J/kg  13.14 Heat of Decomposition: Not pertinent  13.15 Heat of Obecomposition: Not pertinent
NAS Hazard Rating for Bulk Water Transportation:   Category   Rating	13.6 Critical Pressure: Not pertinent  13.7 Specific Gravity: 0.80-0.85 at 20°C (figurd)  13.8 Liquid Surface Tension: 23-32 dynes/em = 0.023-0.032 N/m at 20°C  13.9 Liquid-Water Interfacial Tension: 47-49 dynes/em = 0.047-0.049 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent  13.11 Ratio of Specific Hests of Vapor (Gas): Not pertinent  13.12 Latent Heat of Vaporization: 10.8 Btu/lb = 60 cat/g = 2.51 × 10° J /kg  13.13 Heat of Combustion: −18.540 Btu/lb = −10.300 cat/g = −431 24 × 10° J /kg  13.14 Heat of Decomposition: Not pertinent  13.15 Heat of Polymerization: Not pertinent
Not listed   NAS Hazard Rating for Bulk Water Transportation:   Category   Rating	13.6 Critical Pressure: Not pertinent  13.7 Specific Gravity: 0.80-0.85 at 20°C (figurd)  13.8 Liquid Surface Tension: 23-32 dynes/em = 0.023-0.032 N/m at 20°C  13.9 Liquid-Water Interfacial Tension: 47-49 dynes/em = 0.047-0.049 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent  13.11 Ratio of Specific Hests of Vapor (Gas): Not pertinent  13.12 Latent Heat of Vaporization: 10.8 Btu/lb = 60 cat/g = 2.51 × 10° J /kg  13.13 Heat of Combustion: −18.540 Btu/lb = −10.300 cat/g = −431 24 × 10° J /kg  13.14 Heat of Decomposition: Not pertinent  13.15 Heat of Polymerization: Not pertinent
Not listed   NAS Hazard Rating for Bulk Water Transportation:   Category   Rating	13.6 Critical Pressure: Not pertinent  13.7 Specific Gravity: 0.80-0 88 at 20°C (figurd)  13.8 Liquid Surface Tension: 23-32 dynes/cm = 0.023-0.032 N/m at 20°C  13.9 Liquid-Water Interfacial Tension: 47-49 dynes/cm = 0.047-0.049 N/m at 20°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent  13.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent  13.12 Latent Heat of Vaporization: 10.8 Bu//lb = 60 cat/g = 2.51 × 10° J/kg  13.13 Heat of Combustion: −18.540 Btu/lb = −10.300 cat/g = −431 24 × 10° J/kg  13.14 Heat of Decomposition: Not pertinent  13.15 Heat of Solution: Not pertinent  13.16 Heat of Polymerization: Not pertinent

#### OILS, MISCELLANEOUS: TRANSFORMER

Common Synonyme Institute oil immenting oil Petroleum inmining oil Petroleum inmining oil Pitroleum inmining oil Floats on water.  Stop discharge if possible. Call fire department. Avoid contact with liquid.		6.2	6. FIRE HAZARDS Flash Points-295°F O.C. Flammable Limits in Air: Data not available Fire Extinguishing Agents: Foam, dry chemical, or carbon dioxide Fire Extinguishing Agents Not to be Used: Water may be ineffective.	8. WATER POLLUTION 8.1 Aquatic Texicity: Data not available 8.2 Waterload Texicity: Data not available 8.3 Biological Oxygen Demand (BOD): Data not available 8.4 Food Chain Concentration Potential: None	
Isolate and re	emove discharged material. health and pollution control ag	encies.	6.6	Special Hazarda of Combustion Products: Not pertinent  Behavior in First- Not pertinent	
Fire	Combustible. Extinguish with foam, dry c Water may be ineffective on	hemical, carbon dioxide. fire.	6.7 6.8 6.9	Ignition Temperature: Data not available. Electrical Hazard: Not pertinent Burning Rate: Data not available	9. SELECTED MANUFACTURERS  1. Shell Oil Co. 1 Shell Plaza Houston, Tex. 77001  2. Standard Oil Co. (Indiana) 910 S. Michigan Ave. Chicago, III. 6005
Exposure	CALL FOR MEDICAL AID LIQUID Irritating to skin and eyes. Hamful if swallowed. Remove contaminated cloth Flush affected areas with pid F1 NE YES. hold evelids of IF SWALLOWED and victim or milk. DO NOT INDUCE VOMITE	ine.  Inty of water.  Then and flush with plenty of water.  IN CONSCIOUS, have victim drink water	7.2 7.3 7.4	7. CHEMICAL REACTIVITY Reactivity with Water: No reaction Reactivity with Common Materials: No reaction Stability During Transport: Stable Neutralizing Agents for Acids and Caustics: Not pertinent Polymerization: Not pertinent	3. Sun Oil Co. St. Davids, Pu. 19087
				Inhibitor of Polymerization: Not pertinent	10. SHIPPING INFORMATION  10.1 Grades or Purity: Data not available  10.2 Storage Temperature: Ambient  10.3 Inert Atmosphere: No requirement  10.4 Venting: Open (flame arrester)
Water Pollution	Effect of low concentrations Fouling to shoreline. May be dangerous if it entern Notify local health and wild Notify operators of nearby a	water intakes.			
(See Response Method Mechanical con Should be remo		2. LABELS  No hazard label required by Code of Federal Regulations		11. HAZARD ASSESSMENT CODE (See Hazard Assessment Handbook, CG 446-3) A-T-U  12. HAZARD CLASSIFICATIONS	13. PHYSICAL AND CHEMICAL PROPERTI  13.1 Physical State at 15°C and 1 atm: Liq  13.2 Molecular Weight: Not pertinent  13.3 Boiling Point at 1 atm: Verv high  13.4 Freezing Point:  -75°F = -59°C = 214°K  13.5 Critical Temperature: Not pertinent
Synonyms: Electr Insula Petrol Coast Guard Com	ting oil eum insulating oil patibility Classification: eum oil Not applicable lons Numerical	4. OBSERVABLE CHARACTERISTICS 4.1 Physical State (as shipped): Liquid 4.2 Color: Coloriess to light brown 4.3 Odor: Like motor oil	12.2	Code of Federal Regulations: Not listed  NAS Mazard Rating for Bulk Water Transportation: Not listed  NFPA Mazard Classifications: Category Classification  Health Hazard (Blue) 0  Flammability (Red) 1  Reactivity (Yellow) 0	13.6 Critical Pressure: Not pertinent  13.7 Specific Gravity: 0.88 at 15°C (liquid)  13.8 Liquid Surface Tension: (est.) 25 dynes/em = 0.025 N/m at 20°  13.9 Liquid-Water Interfacial Tension: 49 dynes/em = 0.049 N/m at 25°C  13.10 Vapor (Gas) Specific Gravity: Not pertinent  13.11 Ratio of Specific Heats of Vapor (Gas Not pertinent  13.12 Latent Heat of Vaporization:
Symptoms Follow frequency of box Treatment for Exp delayed irritation and wash with se Toxicity by Inhala Short-Term Inhala Toxicity by Ingest	re Equipment: Protective g ing Exposure: Ingestion of wel movements. If taken into iosure: INGESTION: do N in by serial X-rays. EYES: wa pap and water. tion (Threshold Limit Value stion Limits: Data not avail ion: Grade I: LD <sub>©</sub> 5 to 15 g/	liquid may irritate stomach and cause increased lungs, delayed pulmonary irritation may occur.  OT induce vomiting. ASPIRATION: check for sh with copious amounts of water. SKIN: wipe off play that and available able			Not pertunent  13.13 Heat of Combustion: (est.) – 18,000 Bis = -10,000 cally = -420 × 10° J/kg  13.14 Heat of Decomposition: Not pertunent  13.15 Heat of Solution: Not pertunent  13.16 Heat of Polymerization: Not pertunent
System if present Liquid or Solid Irr	nt Characteristics: Vapors it in high concentrations. The	imum hazard. If spilled on clothing and allowed		NI	Continued on pages 3 and 61